

COLUMBIA: THE FIRST FIVE FLIGHTS  
ENTRY HEATING DATA SERIES  
VOLUME 5  
THE SIDE FUSELAGE AND PAYLOAD BAY DOOR

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## ERRATA

### Columbia: The First Five Flights

#### Entry Heating Data Series

Volume 5

The Side Fuselage and Payload Bay Door

January 1984

NASA-CR-171732

After publication and distribution of the document listed above it was observed that the numerical values of the Normal Shock Reynolds Numbers flagged on the  $h/h_{ref}$  vs.  $\alpha$  plots were incorrectly labeled. Although the flagged values were correct with respect to time and  $\alpha$  the freestream values instead of the normal shock values were printed. The analyst can obtain the correct value for wind tunnel conditions by multiplying the stated values by 0.1121 or by using the values shown in the following table. This error is consistent for Volumes 2 through 6. The author regrets any inconvenience this has caused for the serious researcher.

#### Correlation Between Free Stream and Normal Shock Reynolds Numbers at Wind Tunnel Conditions

0.0175 Scale $Re_{\infty} / ft \times 10^6$	107 Ft. Length $Re_{\infty} \times 10^6$	107 Ft. Length $Re_{NS} \times 10^5$
0.50	0.936	1.050
1.00	1.873	2.099
1.50	2.809	3.149
2.00	3.745	4.198
2.50	4.681	5.248
3.00	5.618	6.297
3.50	6.554	7.347
3.70	6.928	7.767

## DISCUSSION:

Over 2,000 development flight instruments (DFI) were installed on Columbia with the majority of the DFI flight data recorded during ascent and entry (ref. 1). Additional real-time instrumentation was used to continuously monitor the thermal subsystems during each flight. Successful completion of the first five flights of the Space Shuttle Orbiter has provided sufficient data from radiometers, thermocouples, and pressure transducers to appraise the aerothermodynamic/TPS performance.

The entry heating presented in this report is restricted to the Side Fuselage and Payload Bay Door  $Z = 400$  and  $Z = 440$  traces aft of  $X/L = 0.2$ , see Fig. 1. A tabulation of the orbiter  $X$ ,  $Y$ ,  $Z$  coordinates for each instrument can be found in Table I. This data is presented in two Appendices:

Appendix A: Correlation Parameters

Appendix B: Flight Data

As an aid to the reader, the page numbers for the specific correlation parameters and flight data for each Appendix can be found in Tables II and III.

The surface heating and temperature data presented in this volume is based on the thermal analysis at each individual location via the JSC NONLIN/INVERSE computer program Ref. 2. Values of angle-of-attack and the derived free stream Mach number were obtained from JSC/MPAD Best Estimated Trajectory (BET) data tapes for each flight. The corresponding data values for Normal Shock Reynolds number (Ref. 3), reference heating rate, reference film coefficient, and total enthalpy were obtained via the MINIVER computer program (Ref. 4). Values of  $h/h_{ref}$  were computed using a  $0.9 H_T$  recovery enthalpy. The comparison of wind tunnel data ( $0.9 H_T$ ) with flight data for V07T9905A ( $X/L=0.545$ ), V09T9511A ( $X/L=0.673$ ), and V09T9736A ( $X/L=0.854$ ) was obtained by linear interpolation from  $X/L=0.2$  and  $X/L=0.3$ ,  $X/L=0.5$  and  $X/L=0.6$ , and  $X/L=0.65$  and  $X/L=0.7$  locations, respectively. All other wind tunnel data was taken at  $X/L$  locations ( $\pm 0.01$ ) corresponding to flight measurement locations, except V07T9247A which uses data at  $X/L=.95$  without extrapolation.

At the wind tunnel conditions, Mach 8, (Ref. 5) the Normal Shock Reynolds number is 1.721 times the Reynolds number based on freestream parameters.

All heating rates were calculated with a view factor of 1. The surface emissivity of all instruments was assumed to be 0.80. A majority of the heating rates compared to flight parameters ( $\alpha$ ,  $M_\infty$ , and  $Re_{Ns}$ ) are presented on a log scale with imposed limits of  $10^{-3} \leq h/h_{ref} \leq 1$  except for V07T9926A, V07T9255, V07T9242A, V09T9736A, V07T9244A, and V07T9247A which had imposed limits of  $10^{-4} \leq h/h_{ref} \leq 1$ , and V07T9892A which had imposed limits of  $10^{-2} \leq h/h_{ref} \leq 1$ .

Entry heating data for other vehicle areas is presented in additional volumes. Volume 1: An overview, see Ref. 6, contains the underlying assumptions, detailed trajectory information, and pertinent information for the integration of all subsequent volumes. In order to provide an adequate overview of the entry heating volume 1 will be the last released publication in this series of reports.



## REFERENCES:

1. Smith, J. A., STS-3 Structural and Aerodynamic Pressure and Aerothermodynamics and Thermal Protection System Measurement Locations, NASA JSC 17889, January 15, 1982.
2. Williams, S. D. and Curry, D. M., An Analytical and Experimental Study Using a Single Embedded Thermocouple, J. Spacecraft and Rockets, Vol. 14, October 1977, pp. 632-637.
3. Ried, R. C., Jr.; Goodrich, W. D.; Strouhal, G.; and Curry, D. M.: The Importance of Boundary Layer Transition to the Space Shuttle Design, Proceedings of the Boundary Layer Transition Workshop held November 3-5, 1971. Aerospace Report No. TOR-0172 (S2816-16) -5, December 20, 1971.
4. Hender, D. R., A Miniature Version of the JA70 Aerodynamic Heating Computer Program, H800 (MINIVER) MDC G0462, McDonnell Douglas Astronautics Company, Huntington Beach, CA, June 1970, Revised January 1972.
5. Knox, E. C., Thin-Skin Thermocouple Heat-Transfer Tests on a 0.0175-Scale 140C Shuttle Orbiter Conducted at Mach 8.0 in the AEDC-VKF Tunnel B, AEDC-DR-75-71, Von Karman Gas Dynamics Facility, ARO, Inc., Arnold Engineering Development Center, Arnold Air Force Station, Tennessee, July 30, 1975.
6. Williams, S. D., Columbia: The First Five Flights Entry Heating Data Series, Volume 1, An Overview.



TABLE I  
SIDE FUSELAGE COORDINATES

Z = 400 Trace - Side Fuselage

<u>Measurement</u>	<u>X/L</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
V07T9892A	.201	493.0	-97.8	404.7
V07T9916A	.232	533.5	-103.1	390.5
V07T9893A	.296	616.0	-105.0	402.4
V07T9896A	.346	679.4	-105.0	401.9
V07T9897A	.396	743.4	-105.0	400.6
V07T9855A	.425	780.6	-105.0	394.5
V07T9899A	.445	807.1	-105.0	397.5
V07T9901A	.495	871.0	-105.0	398.5
V07T9905A	.545	935.3	-105.0	404.0
V07T9903A	.600	1006.0	-105.0	399.0
V07T9255A	.650	1070.0	-105.0	398.0
V09T9511A	.673	1100.0	-105.0	397.0
V07T9238A	.700	1134.0	-105.0	398.0
V07T9242A	.798	1260.0	-105.0	400.0
V09T9736A	.854	1332.0	-107.0	392.0
V07T9244A	.900	1391.5	-111.7	400.0
V07T9247A	.977	1490.0	-119.5	398.5

Z = 440 Trace - Side Payload Bay Door

V07T9910A	.306	627.8	-104.9	439.9
V07T9912A	.400	748.4	-105.0	442.0
V07T9924A	.501	878.3	-105.0	440.5
V07T9913A	.598	1003.8	-105.0	441.4
V07T9925A	.703	1138.4	-105.0	441.4
V07T9926A	.795	1257.0	-105.0	442.0

TABLE II

PAGE NUMBERS FOR APPENDIX A:  
CORRELATION PARAMETERS

<u>FLIGHT PARAMETER</u>			<u>STS-FLIGHT</u>				
			<u>STS-1</u>	<u>STS-2</u>	<u>STS-3</u>	<u>STS-4</u>	<u>STS-5</u>
$\alpha$	vs	t	1	2	3	4	5
$M_{\infty}$	vs	t	6	7	8	9	10
$Re_{NS}$	vs	t	11	12	13	14	15
$\alpha$	vs	$M_{\infty}$	16	17	18	19	20
$\alpha$	vs	$Re_{NS}$	21	22	23	24	25
$M_{\infty}$	vs	$Re_{NS}$	26	27	28	49	30
$q_{ref}$	vs	$\alpha$	31	32	33	34	35
$q_{ref}$	vs	$M_{\infty}$	36	37	38	39	40
$q_{ref}$	vs	$Re_{NS}$	41	42	43	44	45
$q_{ref}$	vs	t	46	47	48	49	50
$h_{ref}$	vs	$\alpha$	51	52	53	54	55
$h_{ref}$	vs	$M_{\infty}$	56	57	58	59	60
$h_{ref}$	vs	$Re_{NS}$	61	62	63	64	65
$h_{ref}$	vs	t	66	67	68	69	70

TABLE III - PAGE NUMBERS FOR APPENDIX B: FLIGHT DATA

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9892A	- $h/h_{ref}$	vs	$\alpha$	1	2	3	4	5
	- $h/h_{ref}$	vs	$M_{\infty}$	6	7	8	9	10
	- $h/h_{ref}$	vs	$Re_{NS}$	11	12	13	14	15
	- $\dot{q}_{conv}$	vs	t	16	17	18	19	20
	- $T_s$	vs	t	21	22	23	24	25
V07T9916A	- $h/h_{ref}$	vs	$\alpha$	26	27	28	29	30
	- $h/h_{ref}$	vs	$M_{\infty}$	31	32	33	34	35
	- $h/h_{ref}$	vs	$Re_{NS}$	36	37	38	39	40
	- $\dot{q}_{conv}$	vs	t	41	42	43	44	45
	- $T_s$	vs	t	46	47	48	49	50
V07T9893A	- $h/h_{ref}$	vs	$\alpha$	51	52	53	54	55
	- $h/h_{ref}$	vs	$M_{\infty}$	56	57	58	59	60
	- $h/h_{ref}$	vs	$Re_{NS}$	61	62	63	64	65
	- $\dot{q}_{conv}$	vs	t	66	67	68	69	70
	- $T_s$	vs	t	71	72	73	74	75
V07T9896A	- $h/h_{ref}$	vs	$\alpha$	76	77	78	79	80
	- $h/h_{ref}$	vs	$M_{\infty}$	81	82	83	84	85
	- $h/h_{ref}$	vs	$Re_{NS}$	86	87	88	89	90
	- $\dot{q}_{conv}$	vs	t	91	92	93	94	95
	- $T_s$	vs	t	96	97	98	99	100
V07T9897A	- $h/h_{ref}$	vs	$\alpha$	101	102	103	104	105
	- $h/h_{ref}$	vs	$M_{\infty}$	106	107	108	109	110
	- $h/h_{ref}$	vs	$Re_{NS}$	111	112	113	114	115
	- $\dot{q}_{conv}$	vs	t	116	117	118	119	120
	- $T_s$	vs	t	121	122	123	124	125

TABLE III - Continued

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9855A	- $h/h_{ref}$	vs	$\alpha$	126	127	128	129	130
	- $h/h_{ref}$	vs	$M_{\infty}$	131	132	133	134	135
	- $h/h_{ref}$	vs	$Re_{NS}$	136	137	138	139	140
	- $\dot{q}_{conv}$	vs	$t$	141	142	143	144	145
	- $T_s$	vs	$t$	146	147	148	149	150
V07T9899A	- $h/h_{ref}$	vs	$\alpha$	151	152	153	154	155
	- $h/h_{ref}$	vs	$M_{\infty}$	156	157	158	159	160
	- $h/h_{ref}$	vs	$Re_{NS}$	161	162	163	164	165
	- $\dot{q}_{conv}$	vs	$t$	166	167	168	169	170
	- $T_s$	vs	$t$	171	172	173	174	175
V07T9901A	- $h/h_{ref}$	vs	$\alpha$	176	177	178	179	180
	- $h/h_{ref}$	vs	$M_{\infty}$	181	182	183	184	185
	- $h/h_{ref}$	vs	$Re_{NS}$	186	187	188	189	190
	- $\dot{q}_{conv}$	vs	$t$	191	192	193	194	195
	- $T_s$	vs	$t$	196	197	198	199	200
V07T9905A	- $h/h_{ref}$	vs	$\alpha$	201	202	203	204	205
	- $h/h_{ref}$	vs	$M_{\infty}$	206	207	208	209	210
	- $h/h_{ref}$	vs	$Re_{NS}$	211	212	213	214	215
	- $\dot{q}_{conv}$	vs	$t$	216	217	218	219	220
	- $T_s$	vs	$t$	221	222	223	224	225
V07T9903A	- $h/h_{ref}$	vs	$\alpha$	226	227	228	229	230
	- $h/h_{ref}$	vs	$M_{\infty}$	231	232	233	234	235
	- $h/h_{ref}$	vs	$Re_{NS}$	236	237	238	239	240
	- $\dot{q}_{conv}$	vs	$t$	241	242	243	244	245
	- $T_s$	vs	$t$	246	247	248	249	250

TABLE III - Continued

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9255A	- $h/h_{ref}$	vs	$\alpha$	NA	NA	251	252	253
	- $h/h_{ref}$	vs	$M_{\infty}$	NA	NA	254	255	256
	- $h/h_{ref}$	vs	$Re_{NS}$	NA	NA	257	258	259
	- $\dot{q}_{conv}$	vs	$t$	NA	NA	260	261	262
	- $T_s$	vs	$t$	NA	NA	263	264	265
V09T9511A	- $h/h_{ref}$	vs	$\alpha$	266	267	268	269	270
	- $h/h_{ref}$	vs	$M_{\infty}$	271	272	273	274	275
	- $h/h_{ref}$	vs	$Re_{NS}$	276	277	278	279	280
	- $\dot{q}_{conv}$	vs	$t$	281	282	283	284	285
	- $T_s$	vs	$t$	286	287	288	289	290
V07T9238A	- $h/h_{ref}$	vs	$\alpha$	NA	NA	291	292	293
	- $h/h_{ref}$	vs	$M_{\infty}$	NA	NA	294	295	296
	- $h/h_{ref}$	vs	$Re_{NS}$	NA	NA	297	298	299
	- $\dot{q}_{conv}$	vs	$t$	NA	NA	300	301	302
	- $T_s$	vs	$t$	NA	NA	303	304	305
V07T9242A	- $h/h_{ref}$	vs	$\alpha$	NA	NA	306	307	308
	- $h/h_{ref}$	vs	$M_{\infty}$	NA	NA	309	310	311
	- $h/h_{ref}$	vs	$Re_{NS}$	NA	NA	312	313	314
	- $\dot{q}_{conv}$	vs	$t$	NA	NA	315	316	317
	- $T_s$	vs	$t$	NA	NA	318	319	320
V09T9736A	- $h/h_{ref}$	vs	$\alpha$	321	322	323	324	325
	- $h/h_{ref}$	vs	$M_{\infty}$	326	327	328	329	330
	- $h/h_{ref}$	vs	$Re_{NS}$	331	332	333	334	335
	- $\dot{q}_{conv}$	vs	$t$	336	337	338	339	340
	- $T_s$	vs	$t$	341	342	343	344	345

TABLE III - Continued

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9244A	- $h/h_{ref}$	vs	$\alpha$	NA	NA	346	347	348
	- $h/h_{ref}$	vs	$M_{\infty}$	NA	NA	349	350	351
	- $h/h_{ref}$	vs	$Re_{NS}$	NA	NA	352	353	354
	- $\dot{q}_{conv}$	vs	$t$	NA	NA	355	356	357
	- $T_s$	vs	$t$	NA	NA	358	359	360
V07T9247A	- $h/h_{ref}$	vs	$\alpha$	NA	NA	361	362	363
	- $h/h_{ref}$	vs	$M_{\infty}$	NA	NA	364	365	366
	- $h/h_{ref}$	vs	$Re_{NS}$	NA	NA	367	368	369
	- $\dot{q}_{conv}$	vs	$t$	NA	NA	370	371	372
	- $T_s$	vs	$t$	NA	NA	373	374	375
V07T9910A	- $h/h_{ref}$	vs	$\alpha$	376	377	378	379	380
	- $h/h_{ref}$	vs	$M_{\infty}$	381	382	383	384	385
	- $h/h_{ref}$	vs	$Re_{NS}$	386	387	388	389	390
	- $\dot{q}_{conv}$	vs	$t$	391	392	393	394	395
	- $T_s$	vs	$t$	396	397	398	399	400
V07T9912A	- $h/h_{ref}$	vs	$\alpha$	401	402	403	404	405
	- $h/h_{ref}$	vs	$M_{\infty}$	406	407	408	409	410
	- $h/h_{ref}$	vs	$Re_{NS}$	411	412	413	414	415
	- $\dot{q}_{conv}$	vs	$t$	416	417	418	419	420
	- $T_s$	vs	$t$	421	422	423	424	425
V07T9924A	- $h/h_{ref}$	vs	$\alpha$	426	427	428	429	430
	- $h/h_{ref}$	vs	$M_{\infty}$	431	432	433	434	435
	- $h/h_{ref}$	vs	$Re_{NS}$	436	437	438*	439	440
	- $\dot{q}_{conv}$	vs	$t$	441	442	443	444	445
	- $T_s$	vs	$t$	446	447	448	449	450



TABLE III - Continued

MEASUREMENT				STS-FLIGHT				
				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9913A	- $h/h_{ref}$	vs	$\alpha$	451	452	NA	453	454
	- $h/h_{ref}$	vs	$M_{\infty}$	455	456	NA	457	458
	- $h/h_{ref}$	vs	$Re_{NS}$	459	460	NA	461	462
	- $\dot{q}_{conv}$	vs	t	463	464	NA	465	466
	- $T_s$	vs	t	467	468	NA	469	470
V07T9925A	- $h/h_{ref}$	vs	$\alpha$	471	472	473	474	475
	- $h/h_{ref}$	vs	$M_{\infty}$	476	477	478	479	480
	- $h/h_{ref}$	vs	$Re_{NS}$	481	482	483	484	485
	- $\dot{q}_{conv}$	vs	t	486	487	488	489	490
	- $T_s$	vs	t	491	492	493	494	495
V07T9926A	- $h/h_{ref}$	vs	$\alpha$	NA	NA	496	497	498
	- $h/h_{ref}$	vs	$M_{\infty}$	NA	NA	499	500	501
	- $h/h_{ref}$	vs	$Re_{NS}$	NA	NA	502	503	504
	- $\dot{q}_{conv}$	vs	t	NA	NA	505	506	507
	- $T_s$	vs	t	NA	NA	508	509	510

APPENDIX A

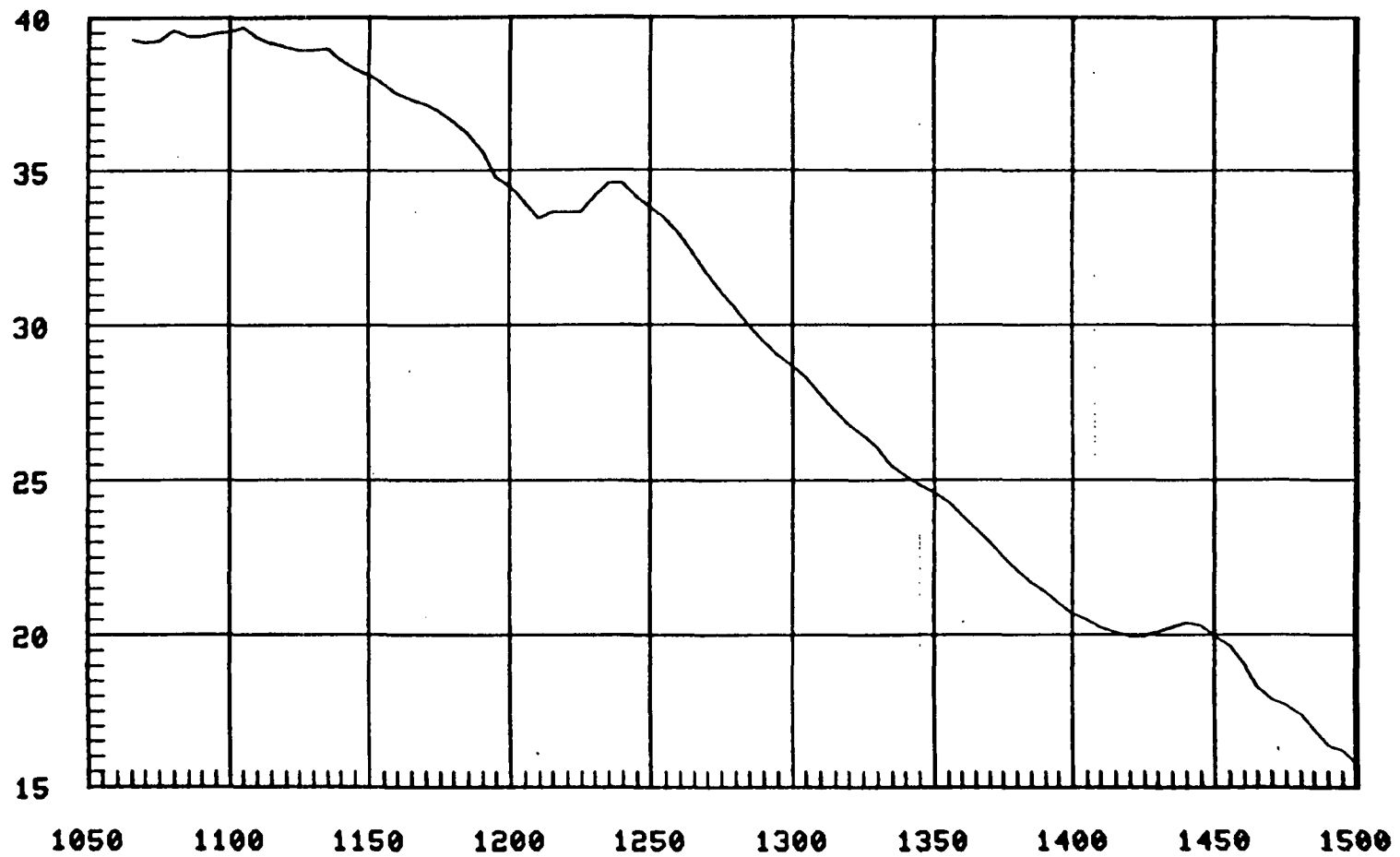
CORRELATION PARAMETERS

# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-1

1065-1500 SEC

REGULATED - CH-60X - DWD



TIME - SECONDS

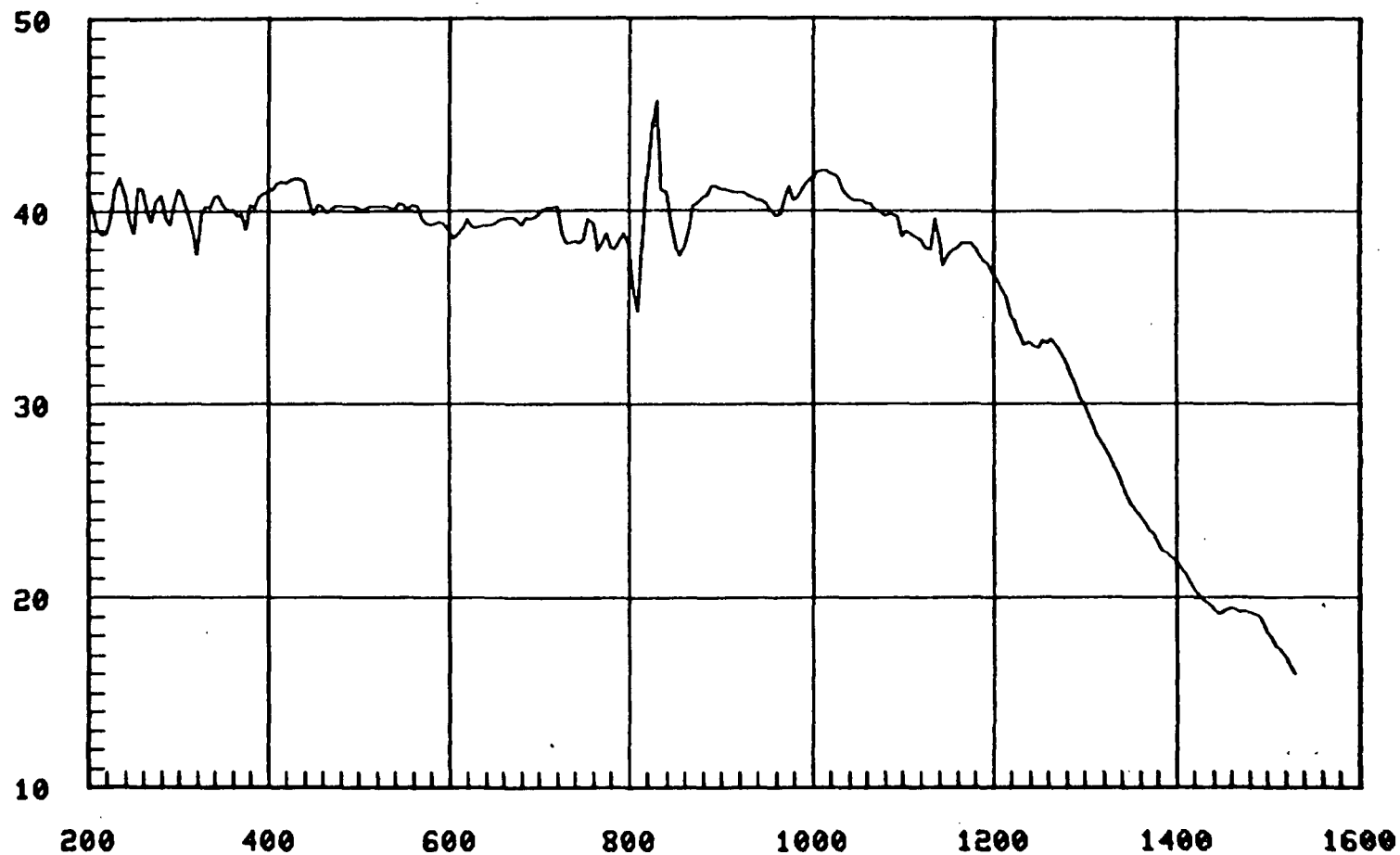
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-2

200-1530 SEC

ACCELERATION - G



TIME - SECONDS

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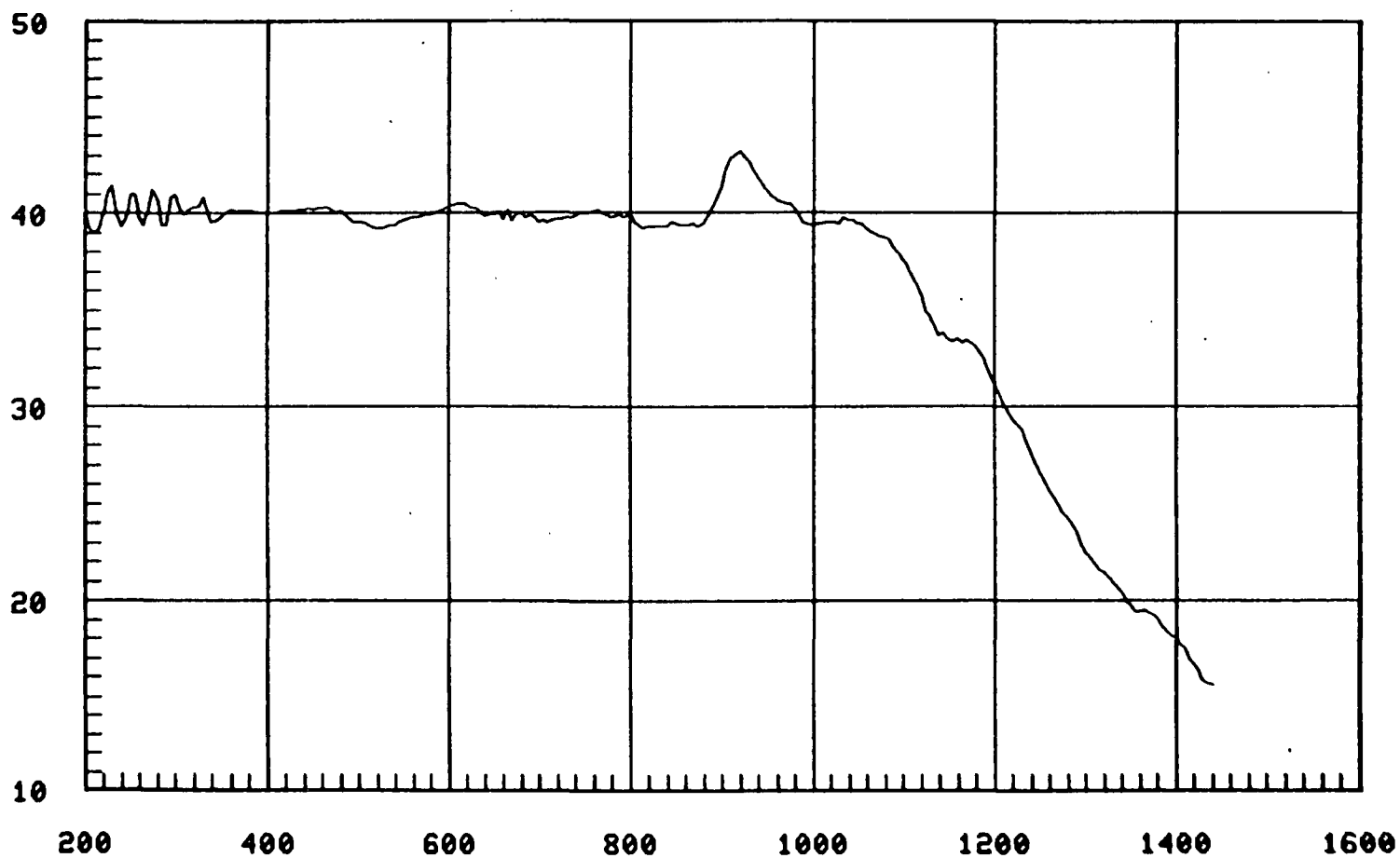
STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-3

200-1440 SEC

REGULATED PRESSURE - GPM

A-3



TIME - SECONDS

01/11/84  
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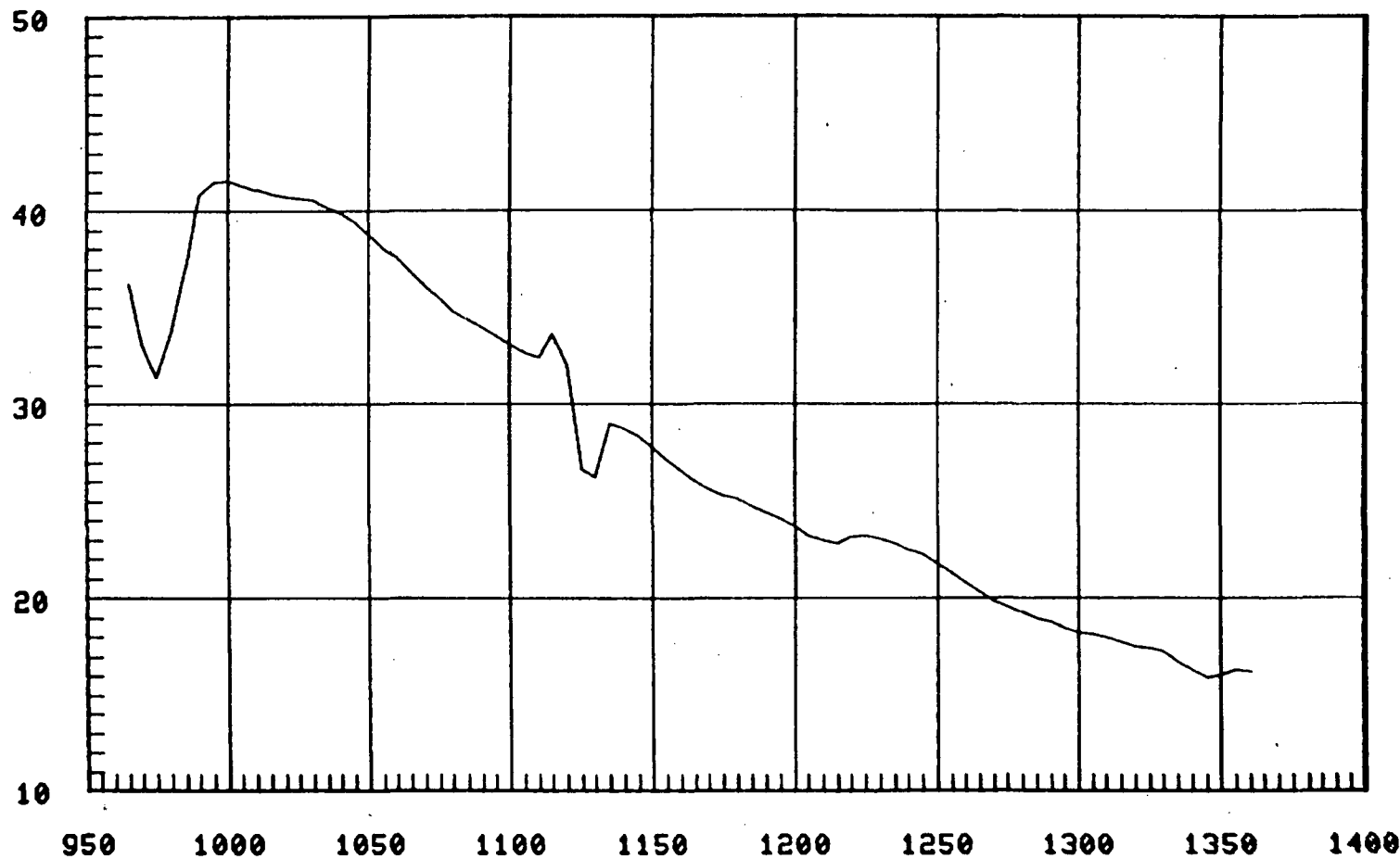
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STS-4

965-1360 SEC

ACCELERATION - G

A-4

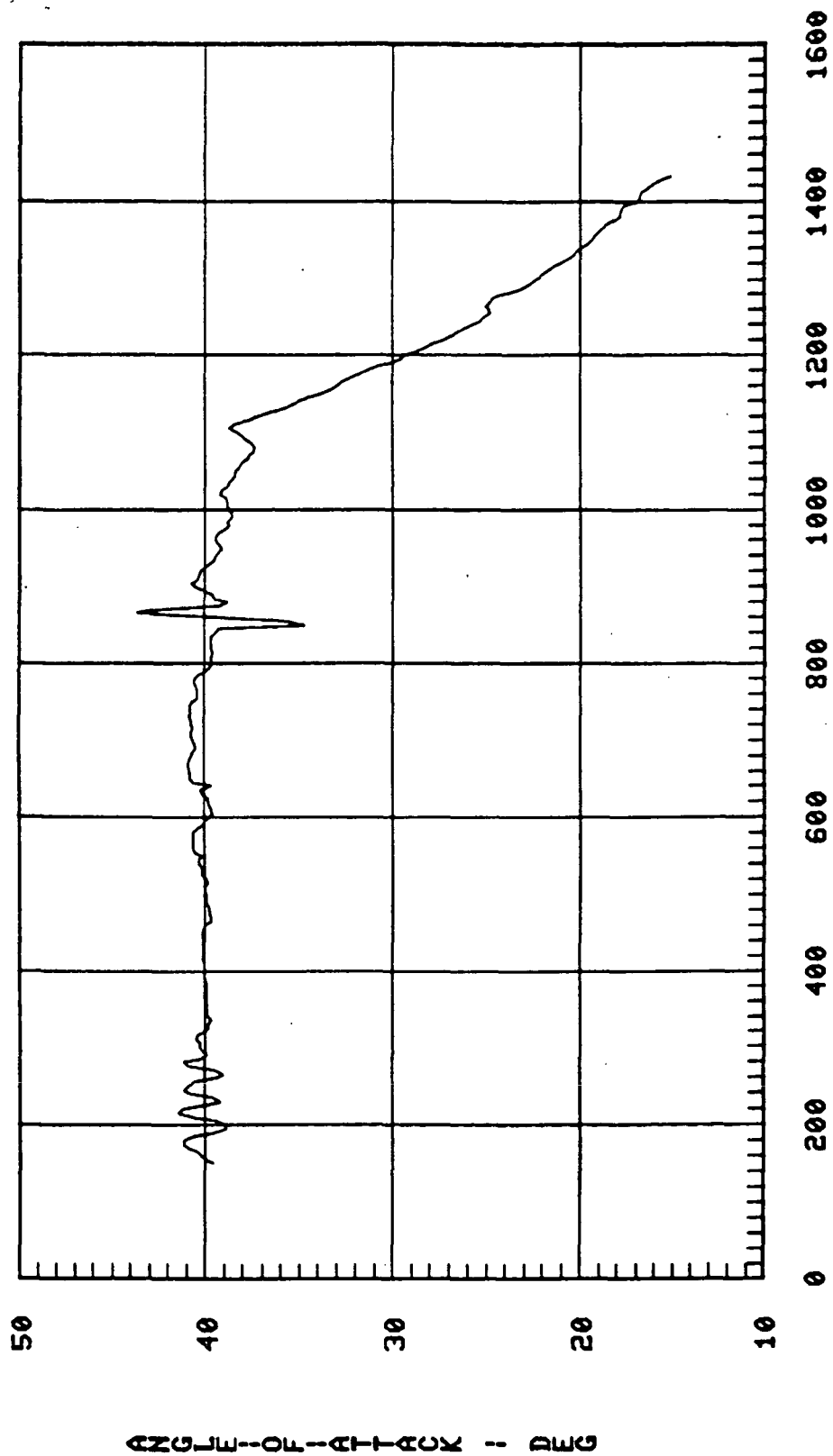


TIME - SECONDS

01/12/84  
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STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-5 150-1430 SEC

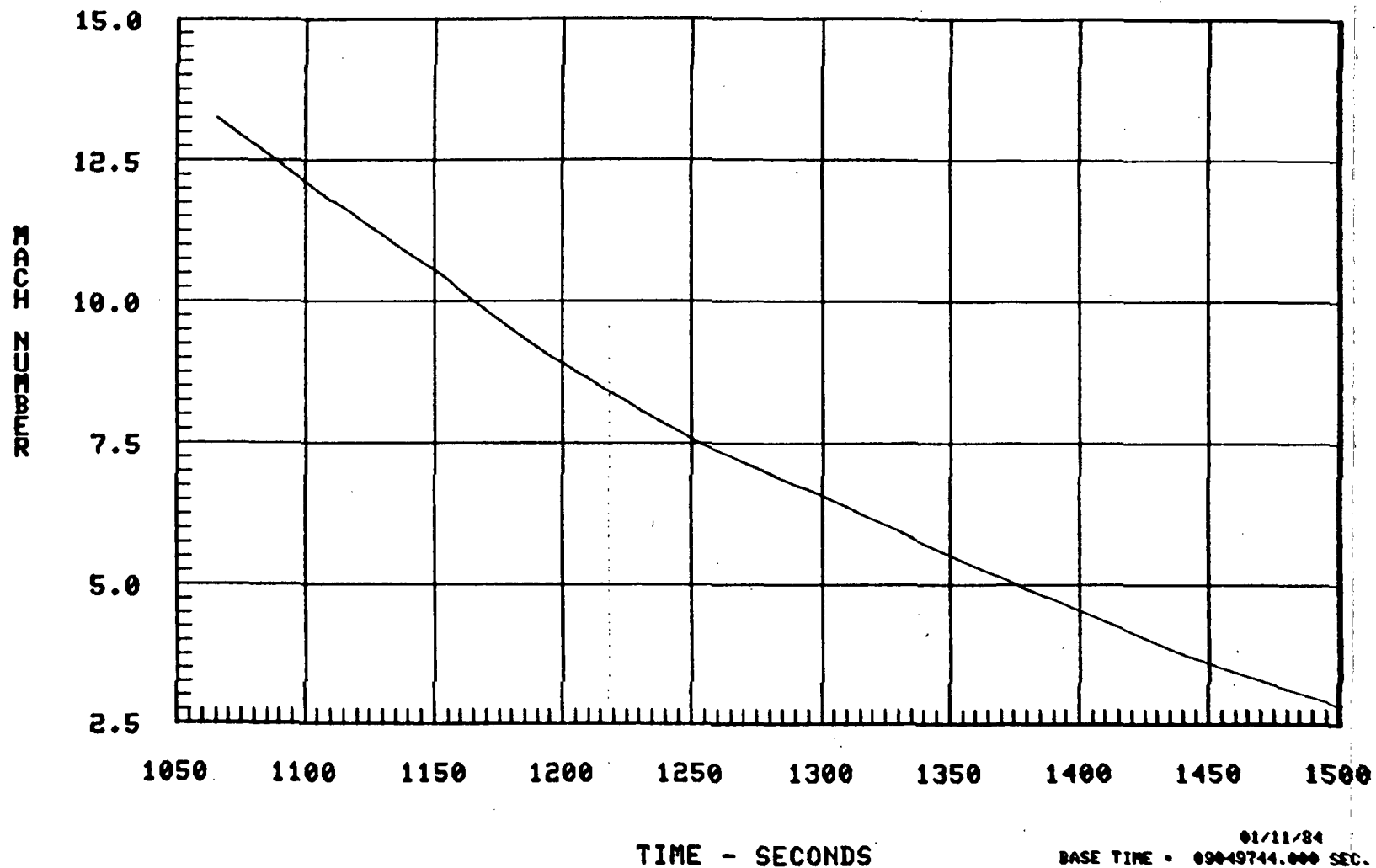


01/12/84  
TIME - SECONDS  
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STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-1

1065-1500 SEC

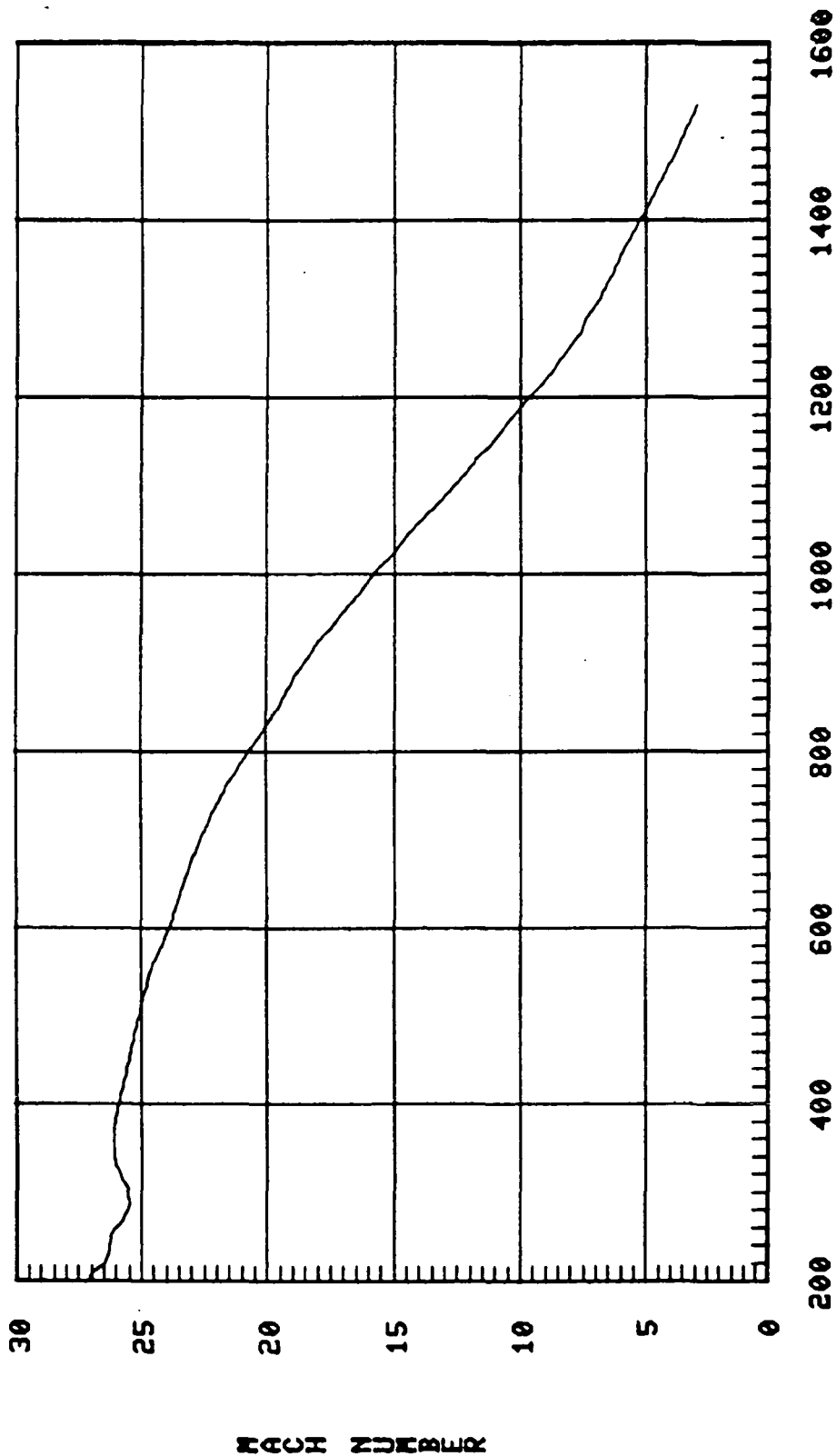




# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-2 200-1530 SEC

STS-2



01/11/84  
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TIME - SECONDS

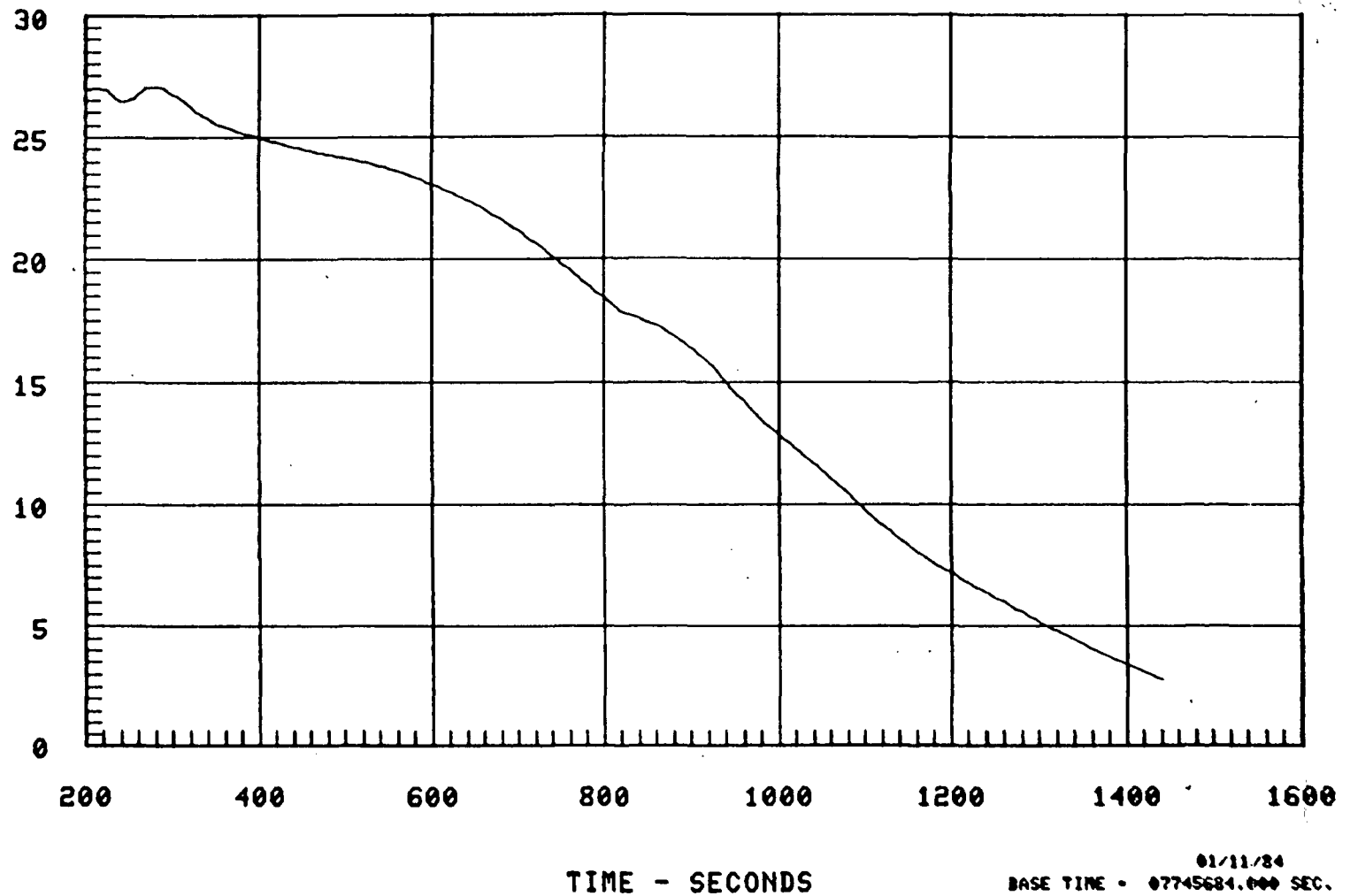
STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-3

200-1440 SEC

WASH NUMBER

A-8



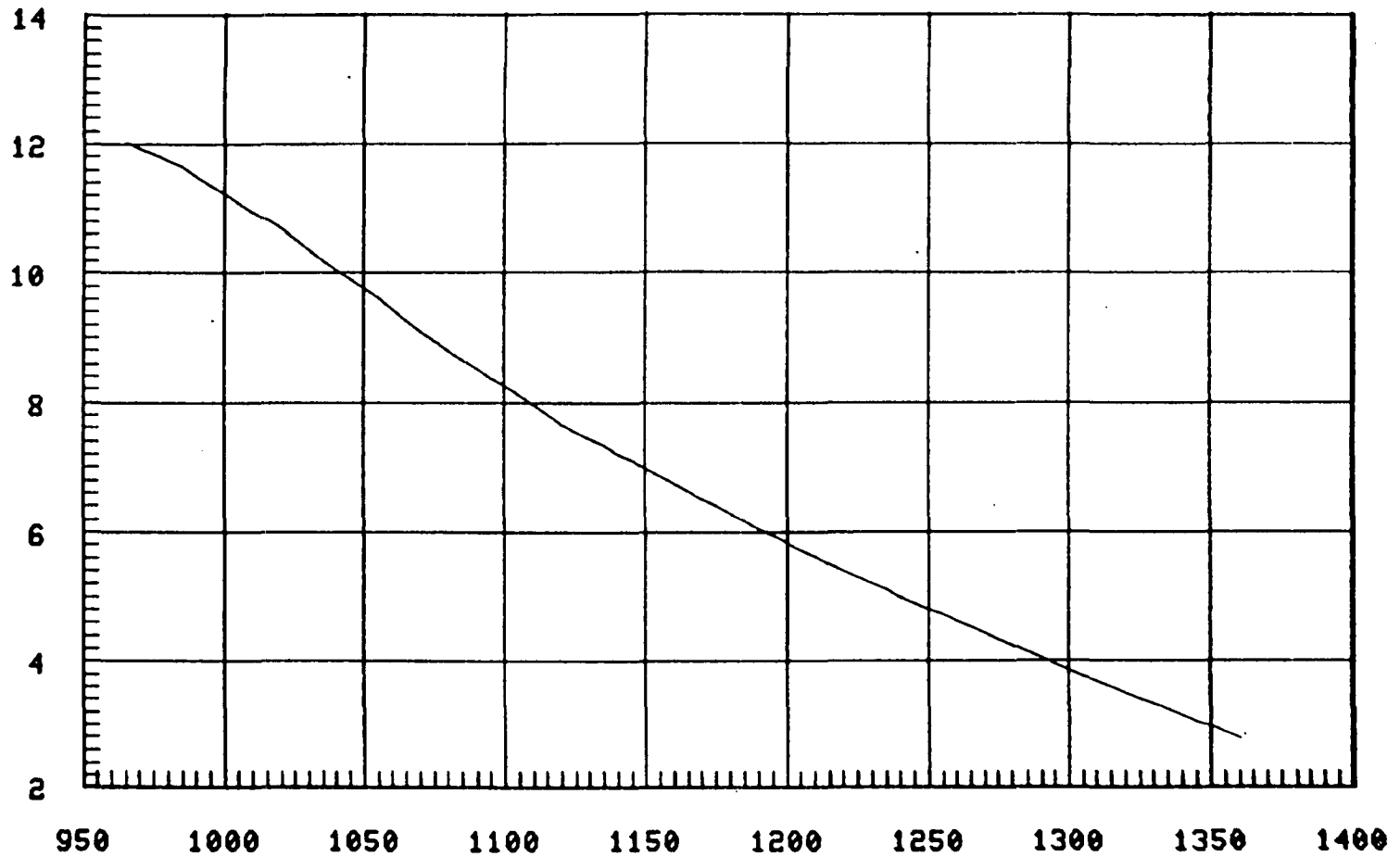
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STS-4

965-1360 SEC

ECOT NUMBER

A-9



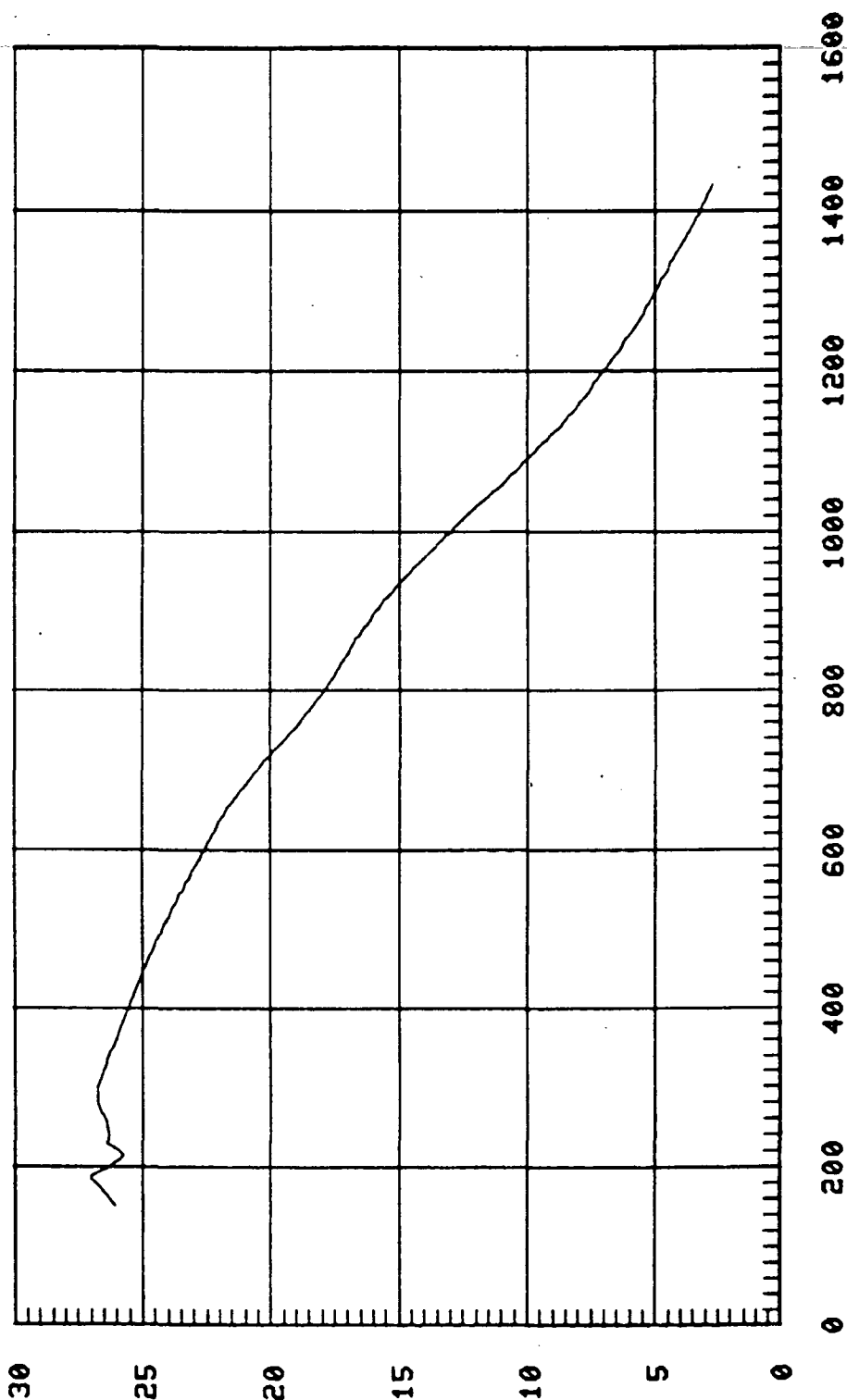
TIME - SECONDS

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STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-5 150-1430 SEC

STS-5



01/12/84  
BASE TIME - 27698591.000 SEC.

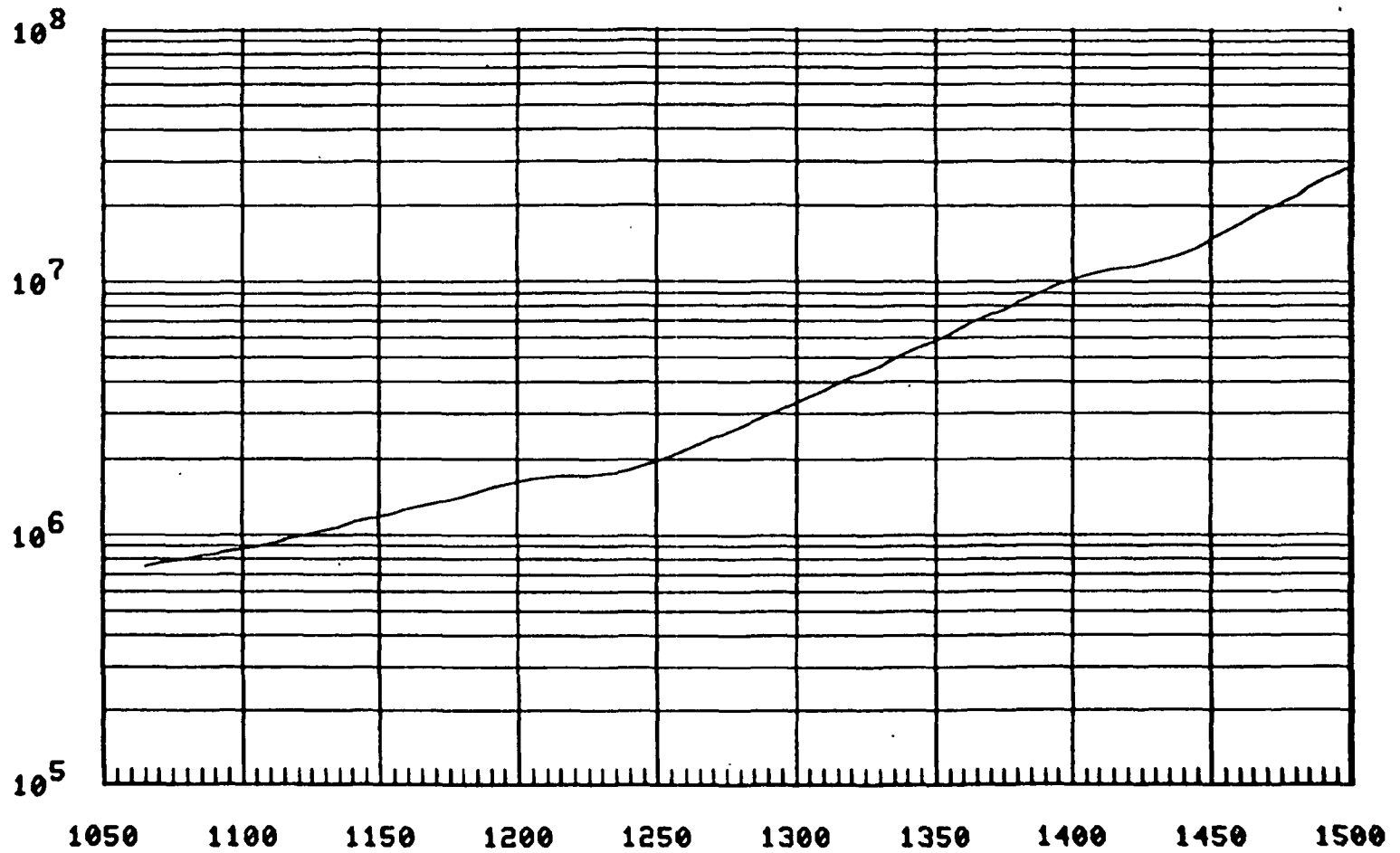
# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-1

1065-1500 SEC

RUZZOZJDS NREBWR VZS

A-11



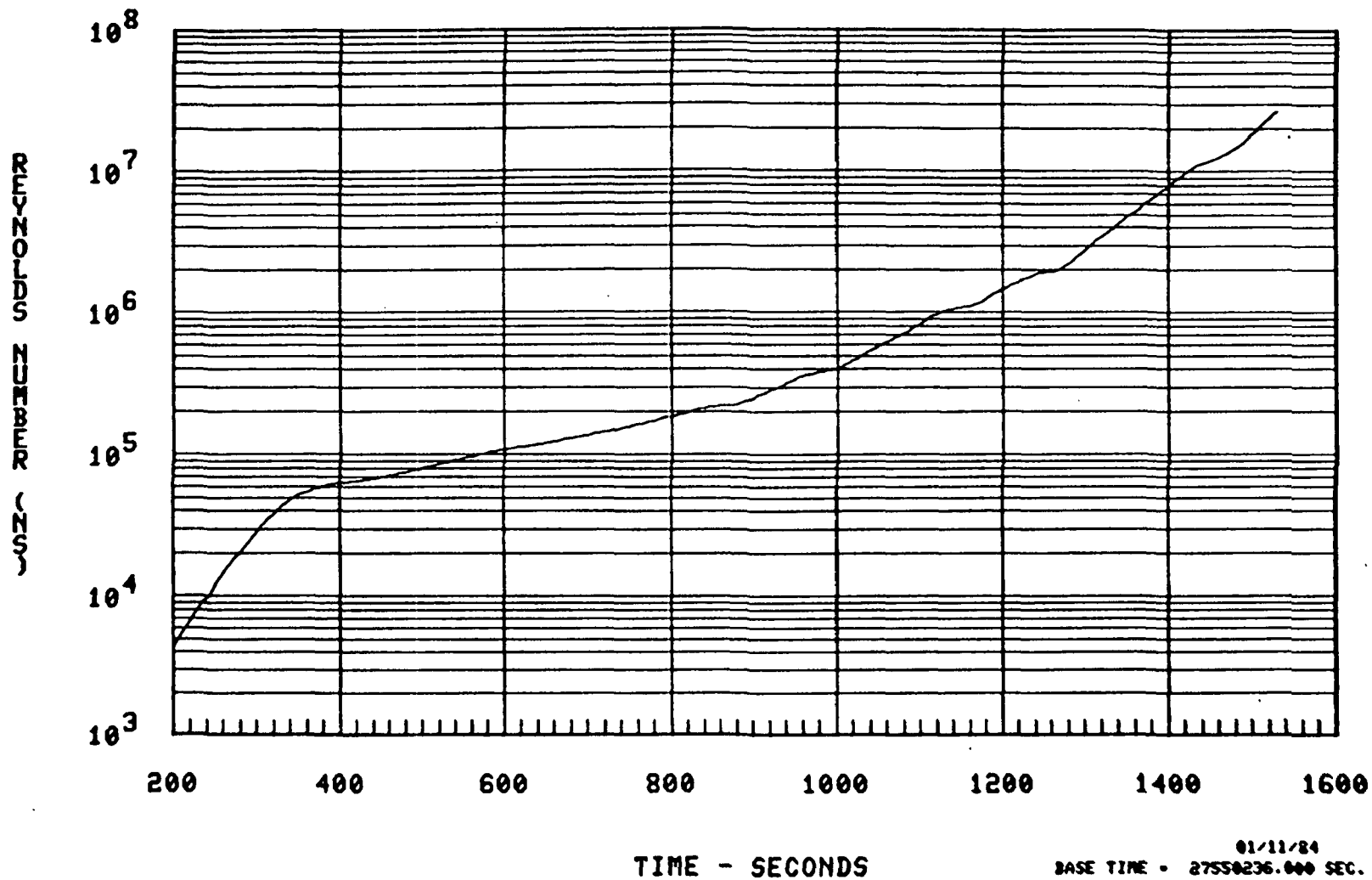
TIME - SECONDS

01/11/84  
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# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-2

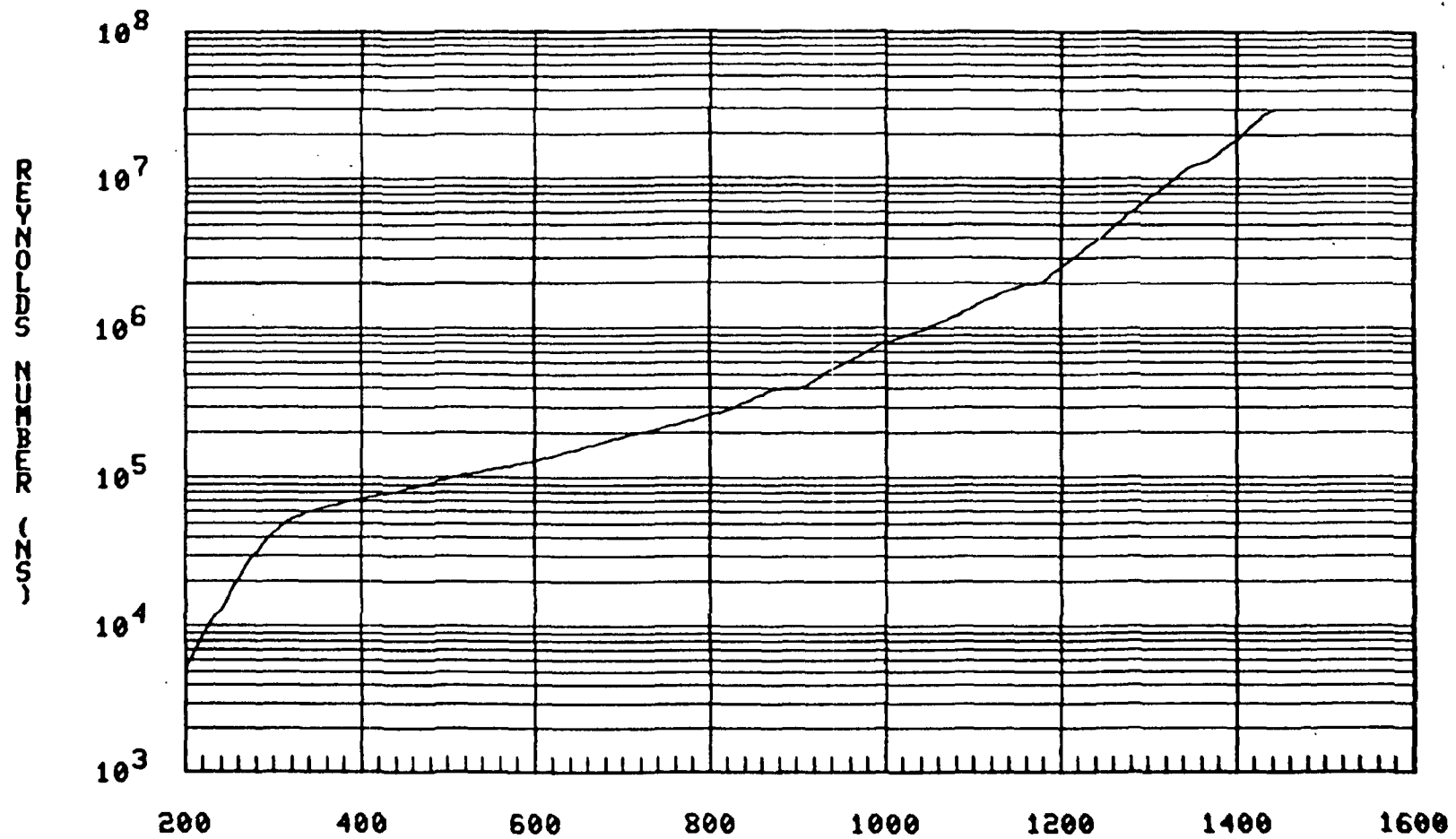
200-1530 SEC



# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-3

200-1440 SEC



A-13

TIME - SECONDS

01/11/84  
BASE TIME - 07745624.000 SEC.

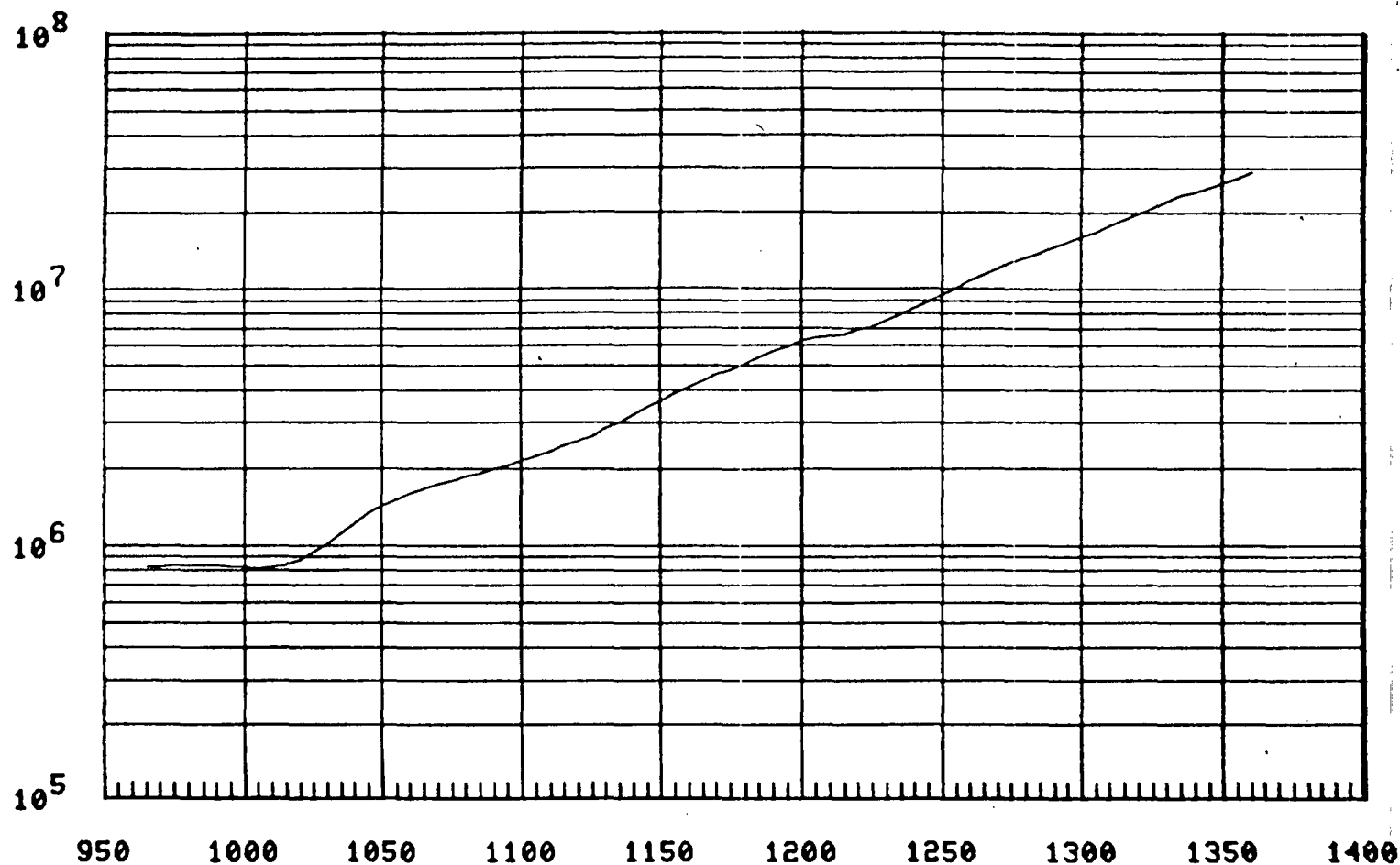
# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-4

965-1360 SEC

REYNOLDS NUMBER (RS)

A-14



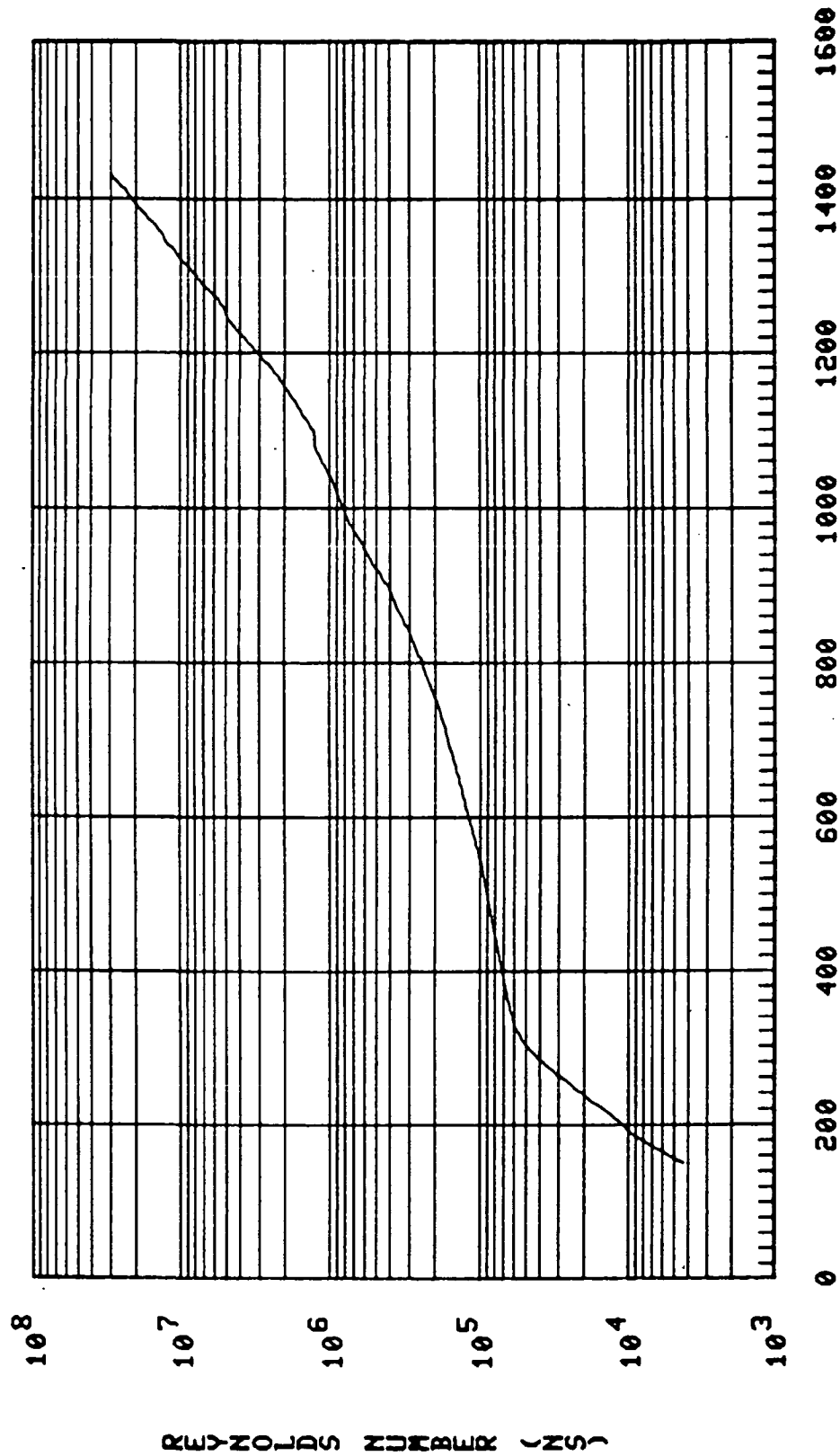
TIME - SECONDS

01/12/84  
BASE TIME = 16040423.000 SEC.



# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-5 150-1430 SEC



01/12/84  
 BASE TIME - 27698591.000 SEC.

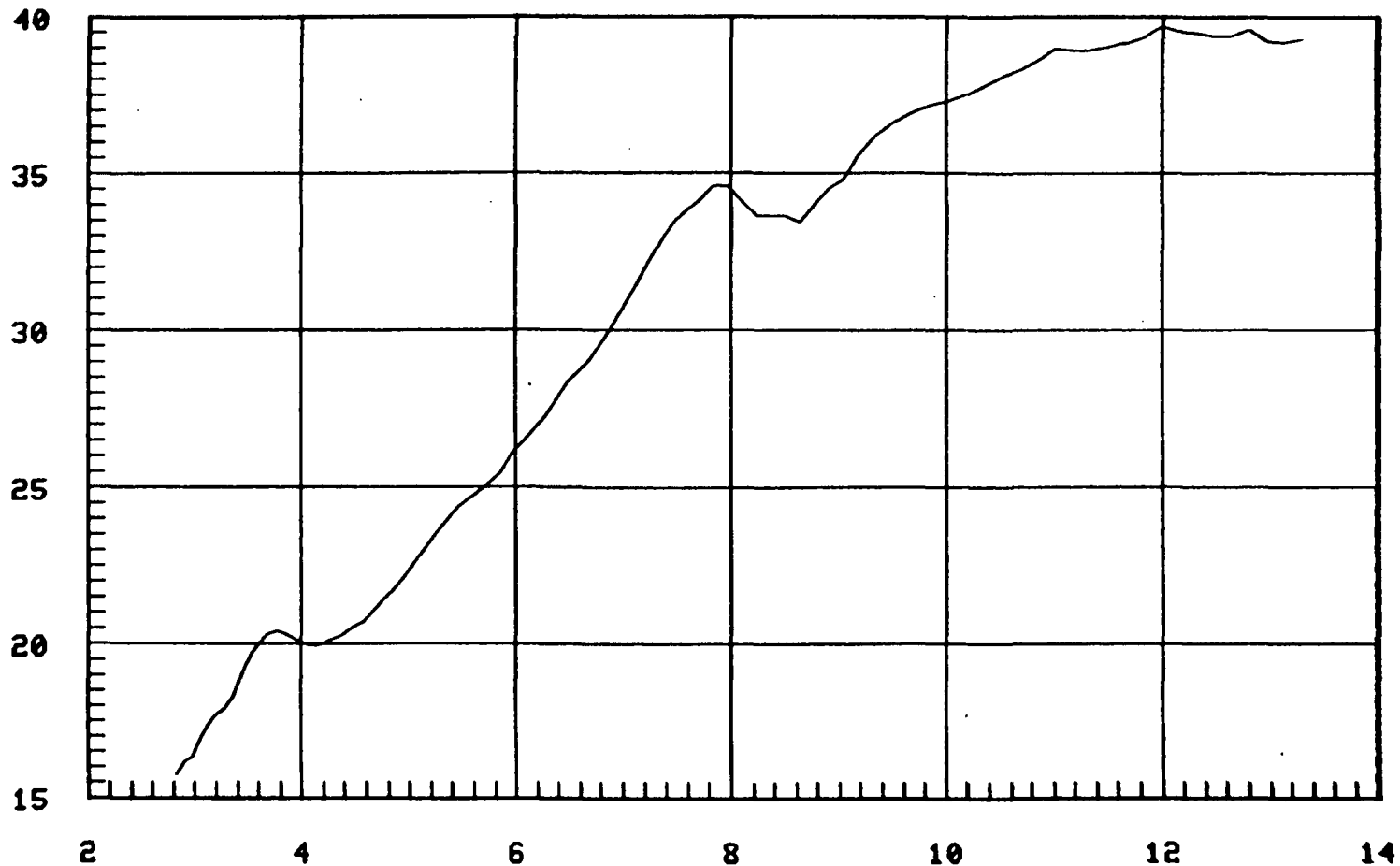
# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-1

1065-1500 SEC

REGULATED PRESSURE - PSI

A-16



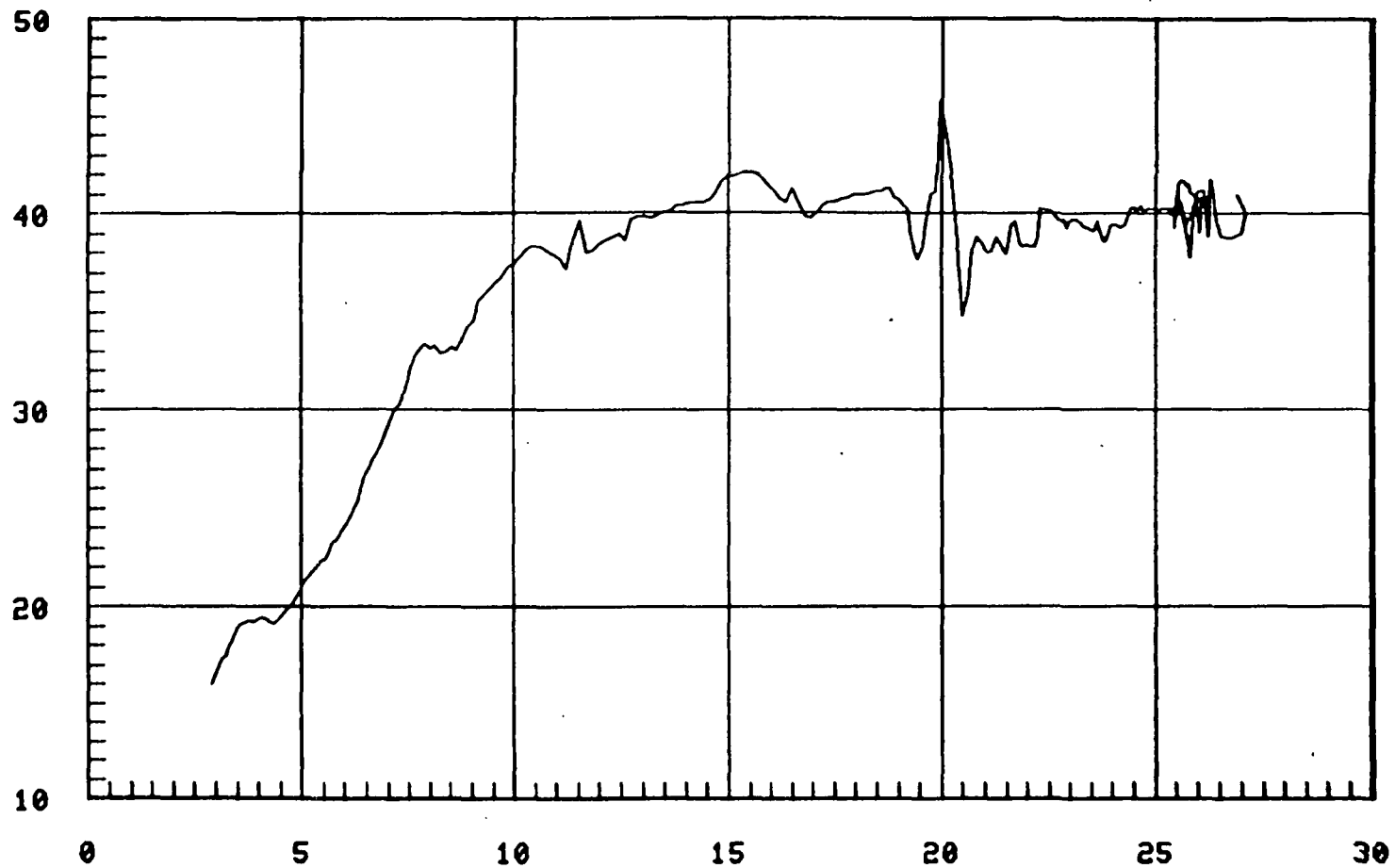
MACH NUMBER

01/11/84  
BASE TIME - 09049744.000 SEC.

STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

**STS-2**

**200-1530 SEC**



**MACH NUMBER**

01/11/84  
BASE TIME • 87550236.000 SEC.

# ATTACK : DEFENSE

A-17

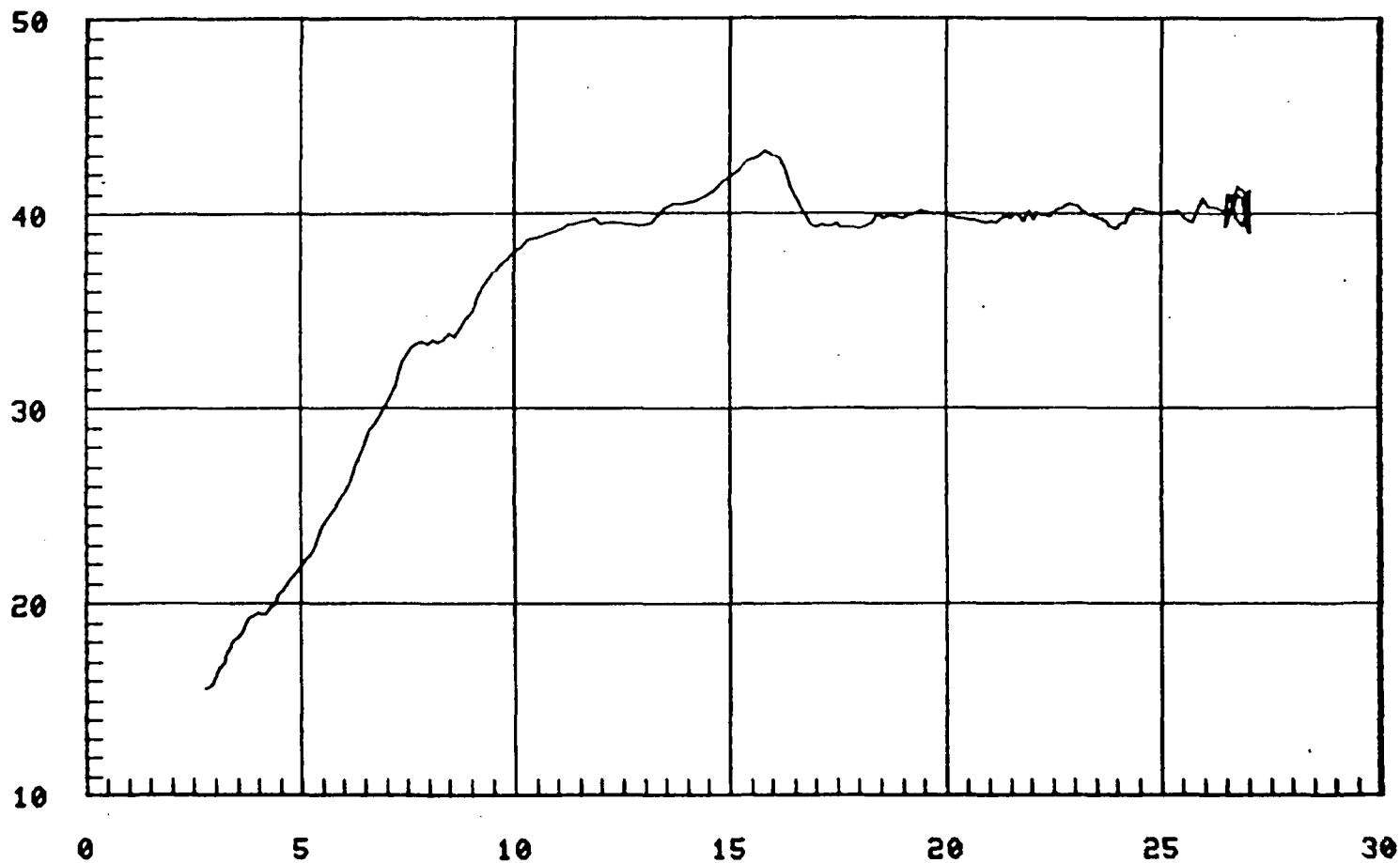
# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-3

200-1440 SEC

ANGLE-OF-ATTACK - DEG

A-18



MACH NUMBER

01/11/84  
BASE TIME - 07745684.000 SEC.

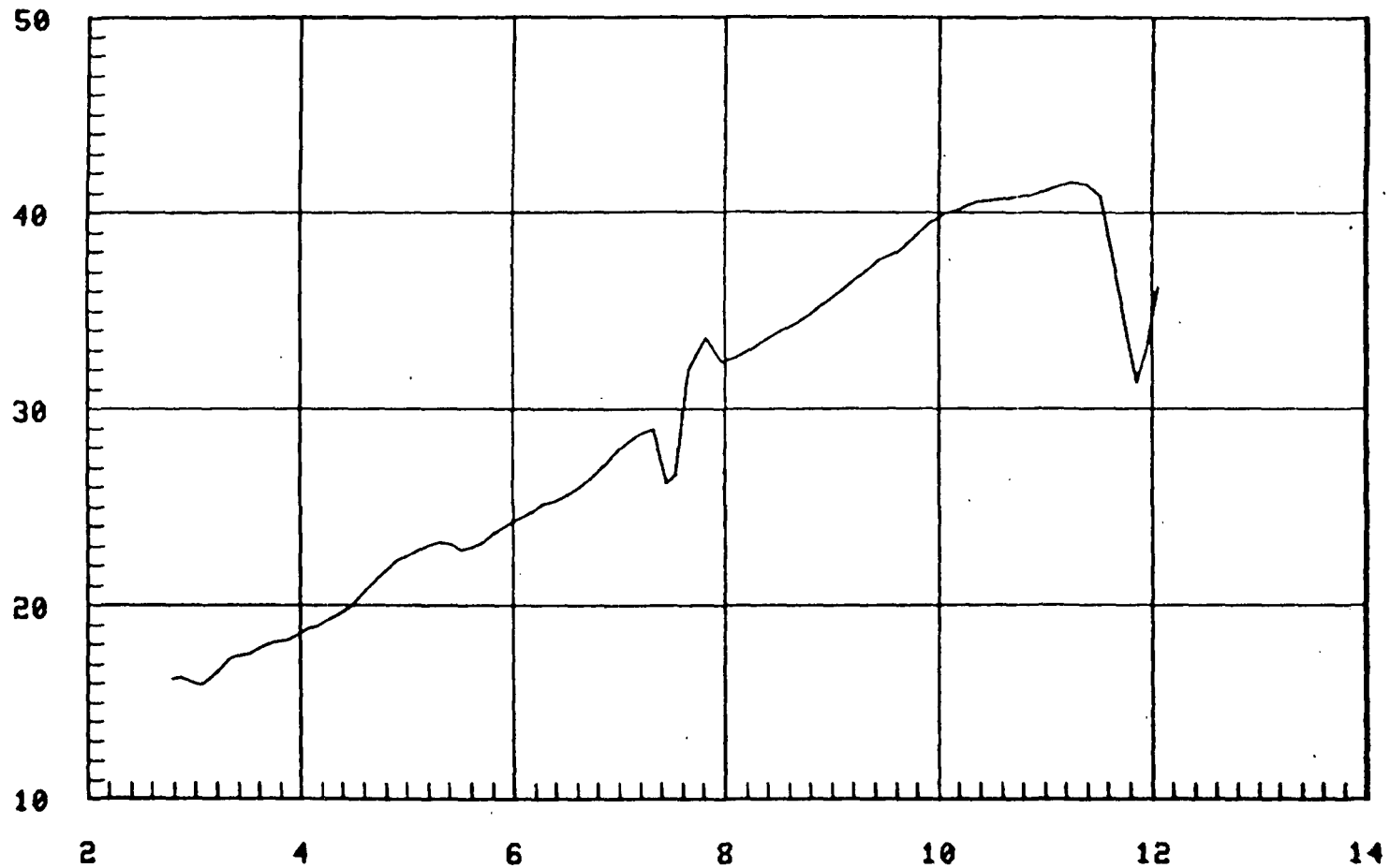
# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-4

965-1360 SEC

GEOMETRICALLY CORRECTED

A-19



MACH NUMBER

01/12/84  
BASE TIME - 16040423.000 SEC.

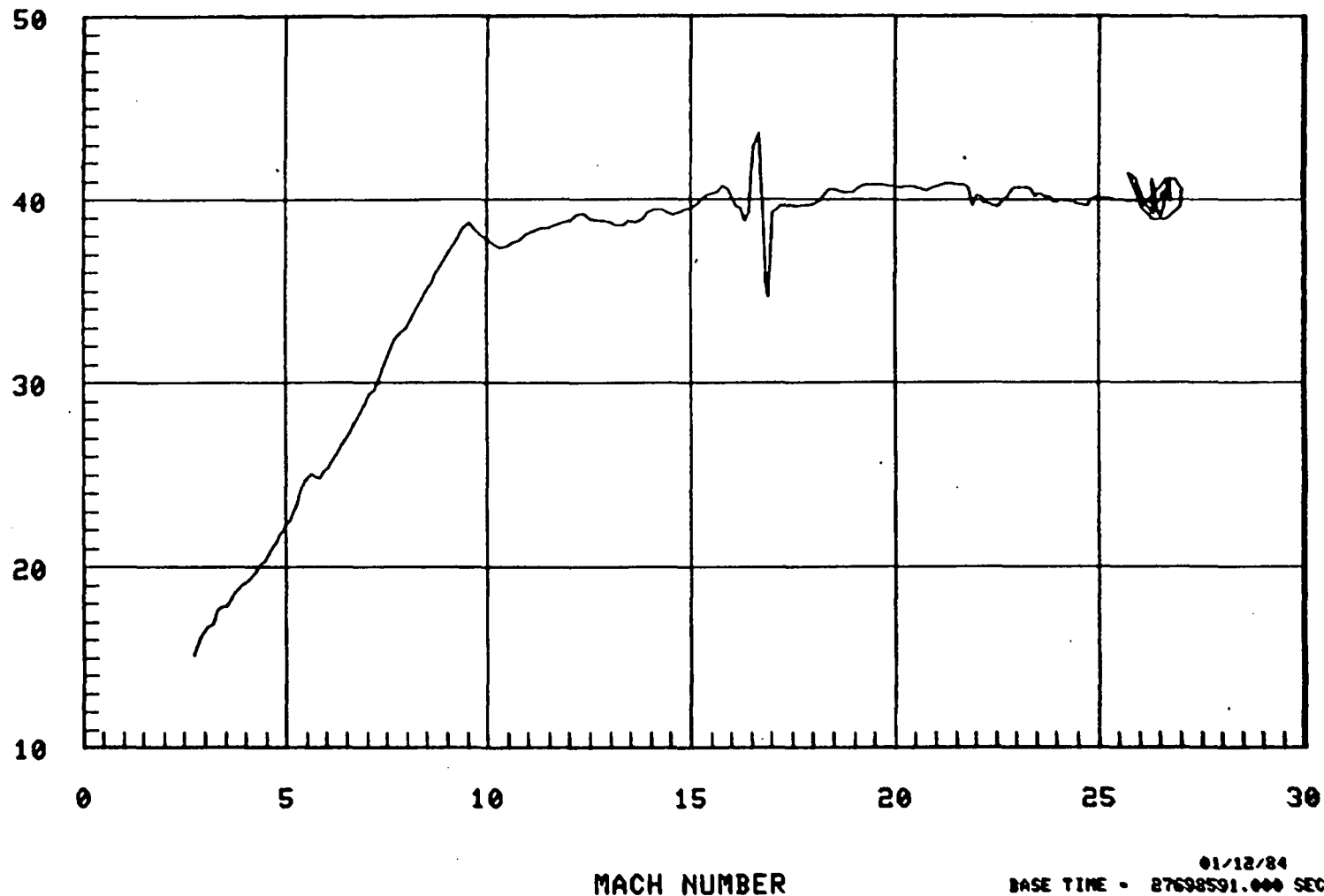
# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-5

150-1430 SEC

PERCENTAGE - DWS

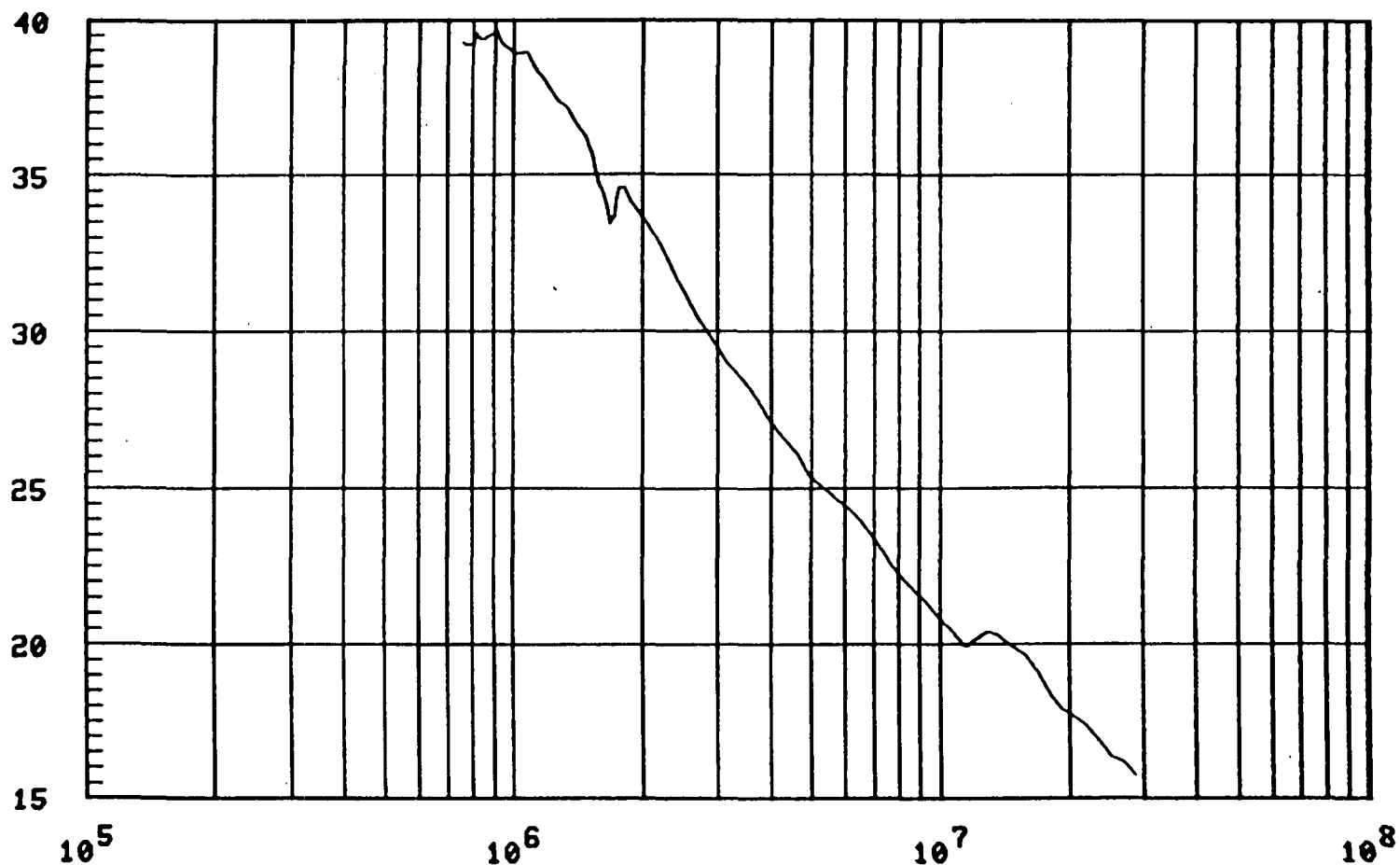
A-20



# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-1 1065-1500 SEC

ACCELERATION - DEG



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME - 09049744.000 SEC.

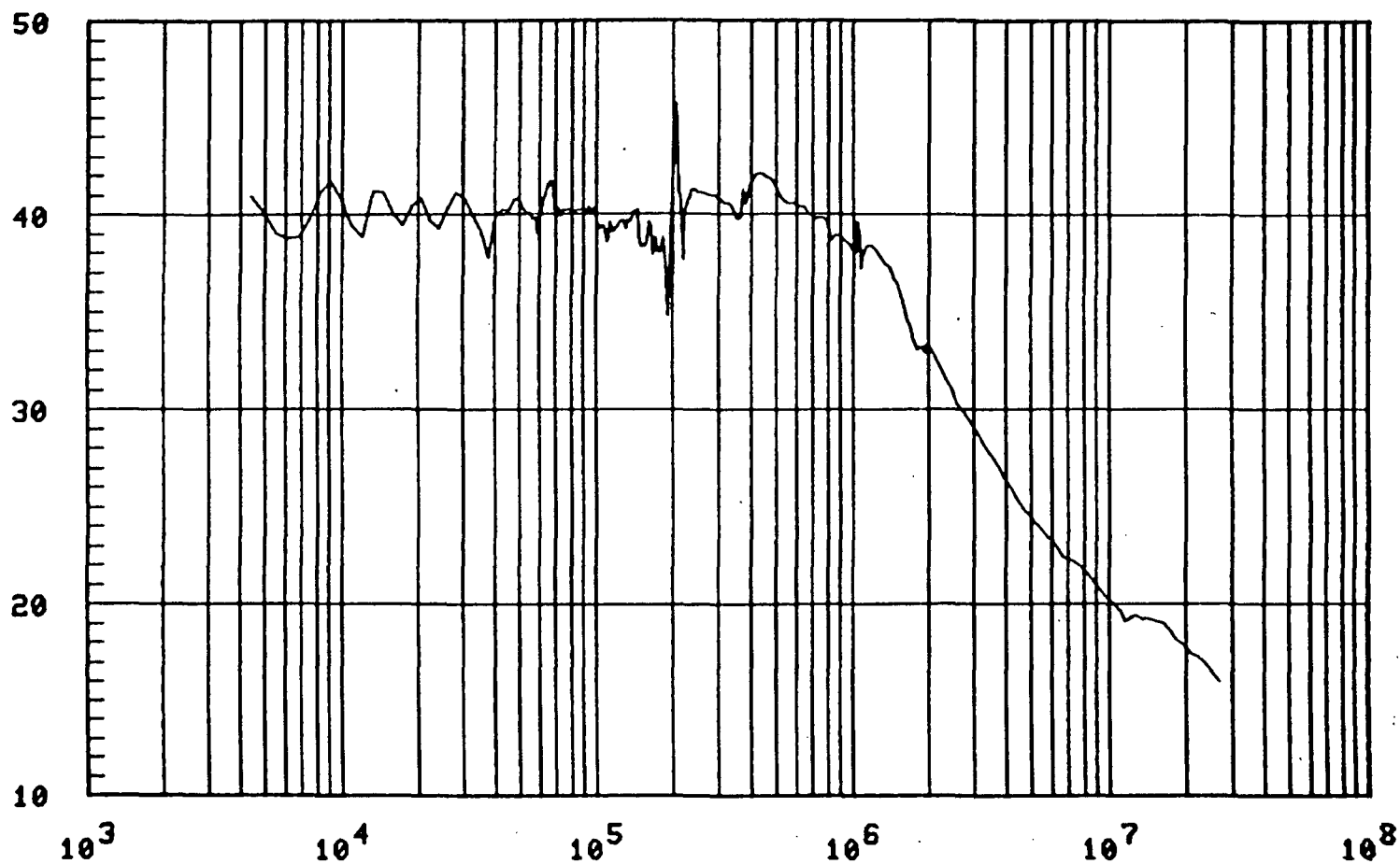
# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-2

200-1530 SEC

ACCELERATION - GWS

A-22



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 27550236.000 SEC.



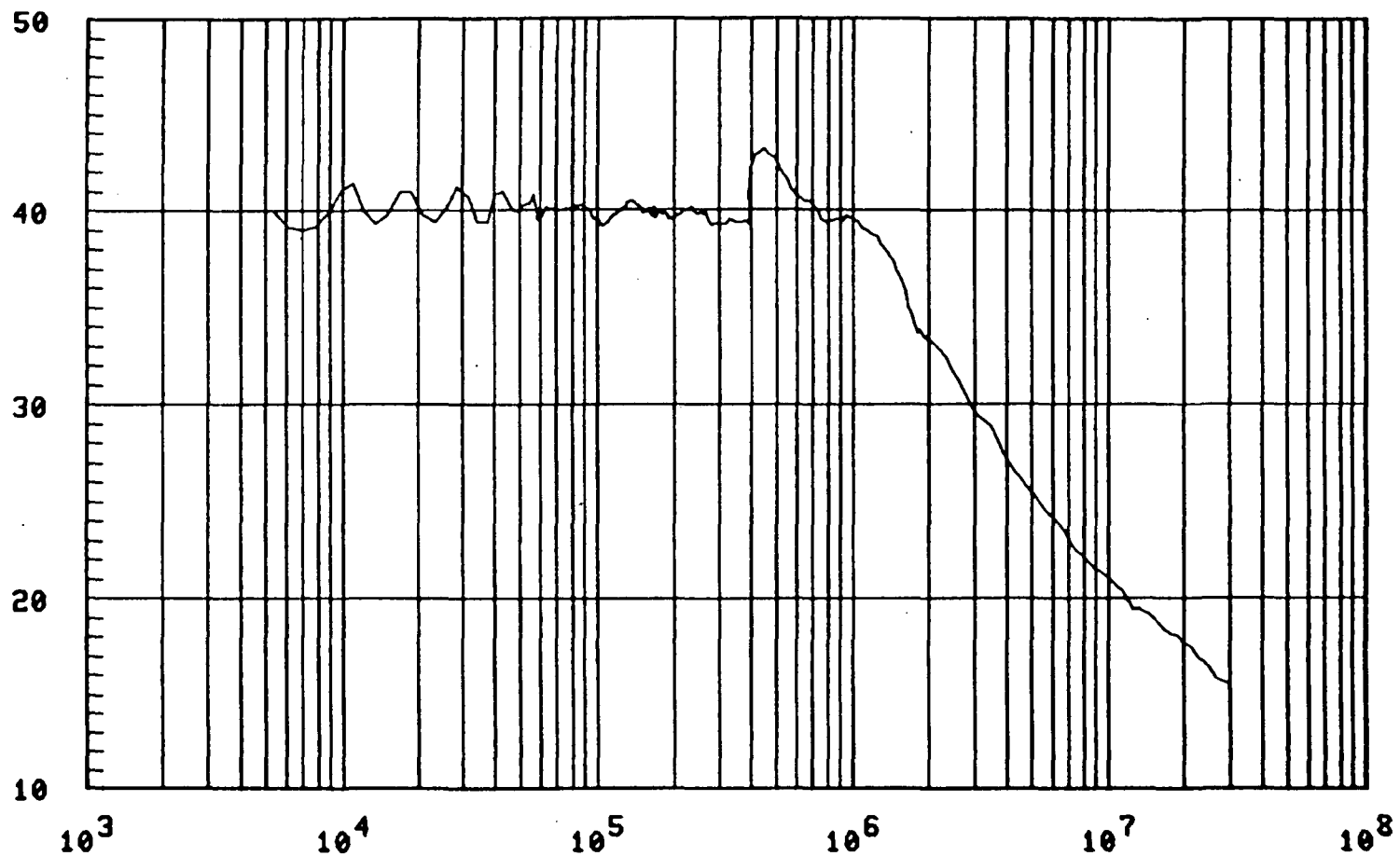
# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-3

200-1440 SEC

ACCU--OL--CH--BOX - 000

A-23



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME - 07745684.000 SEC.

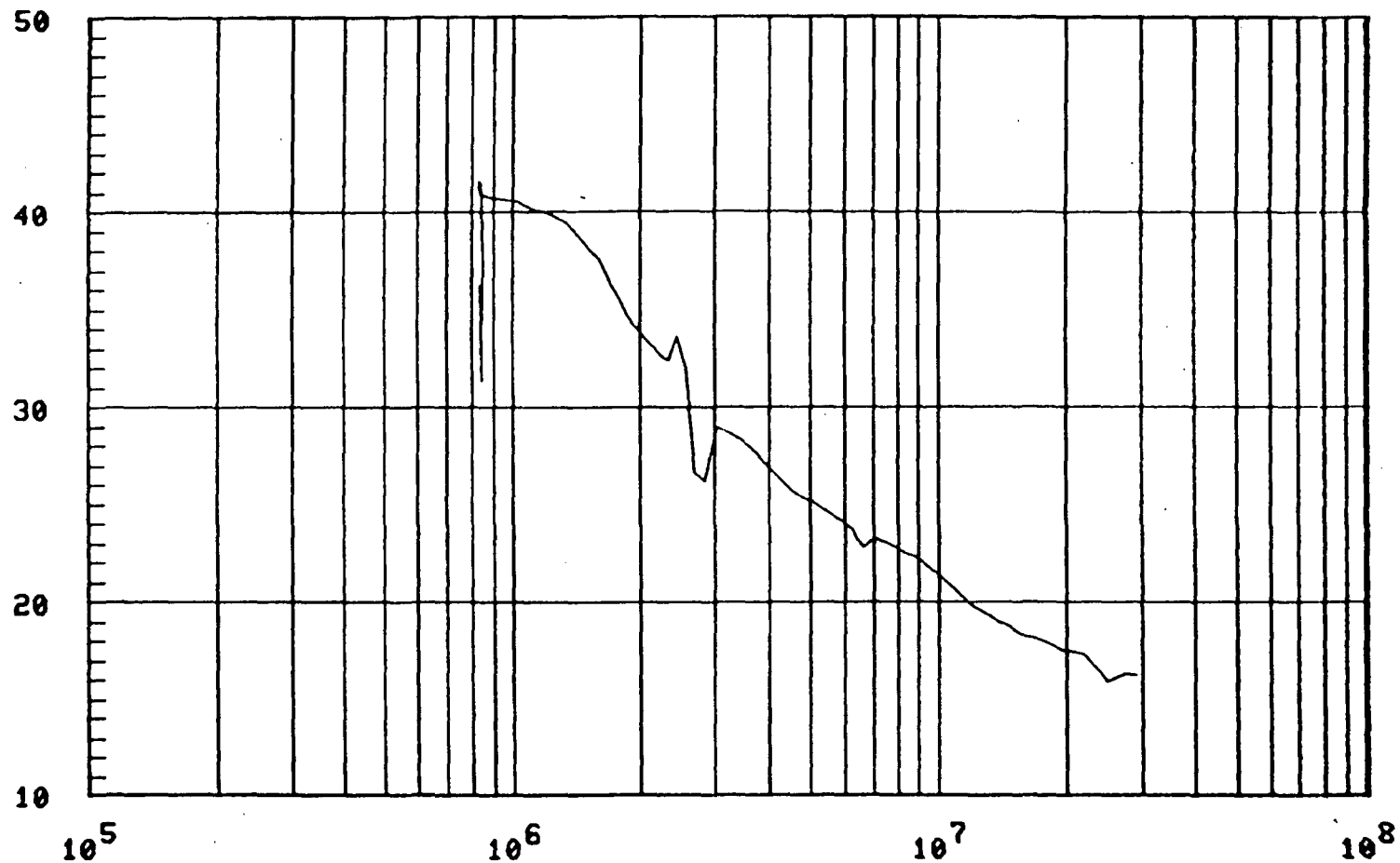
# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-4

965-1360 SEC

ACCELERATION - G

A-24



REYNOLDS NUMBER (NS)

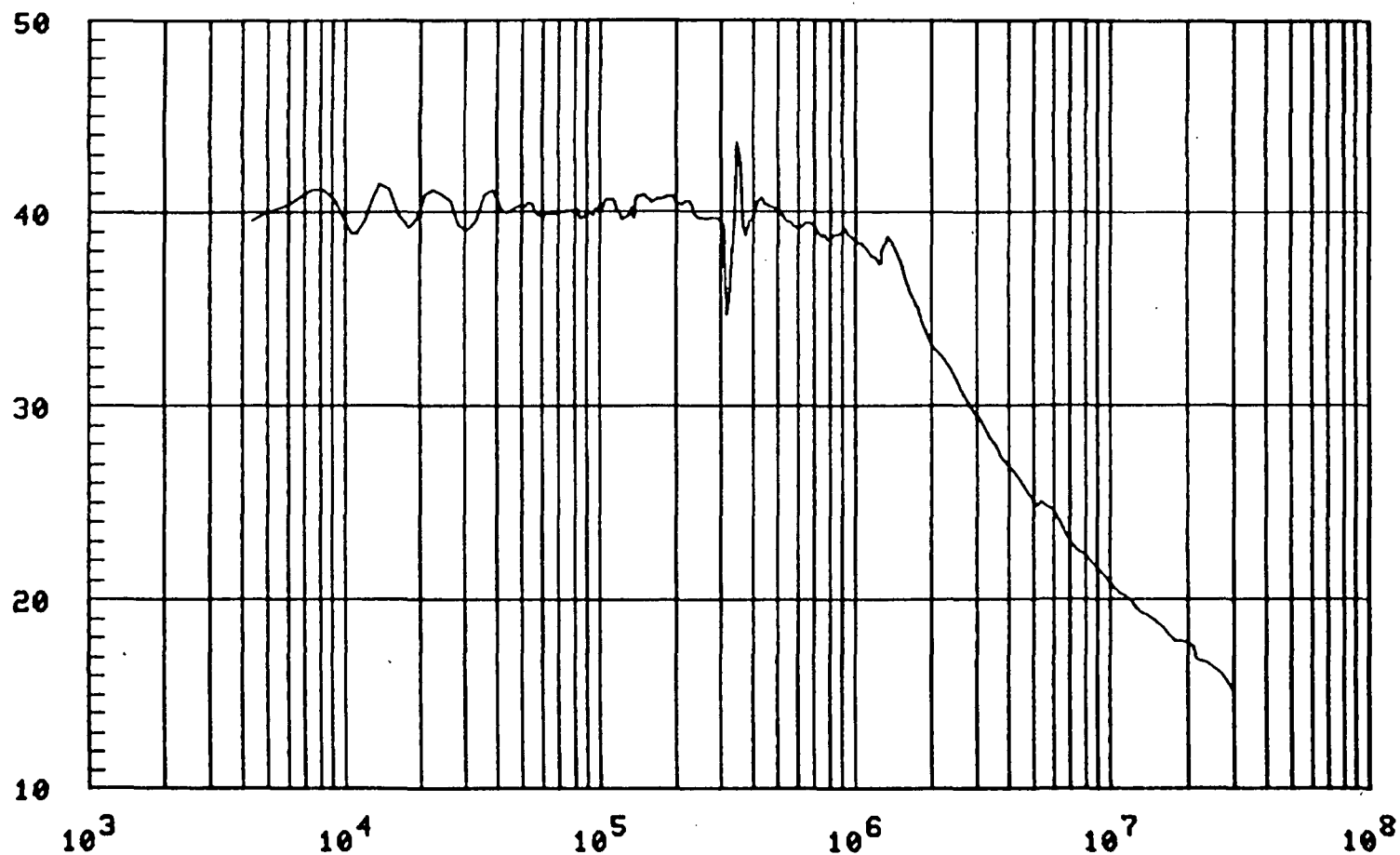
01/12/84  
BASE TIME = 16040423.000 SEC.

STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-5

150-1430 SEC

REYNOLDS NUMBER (NS)



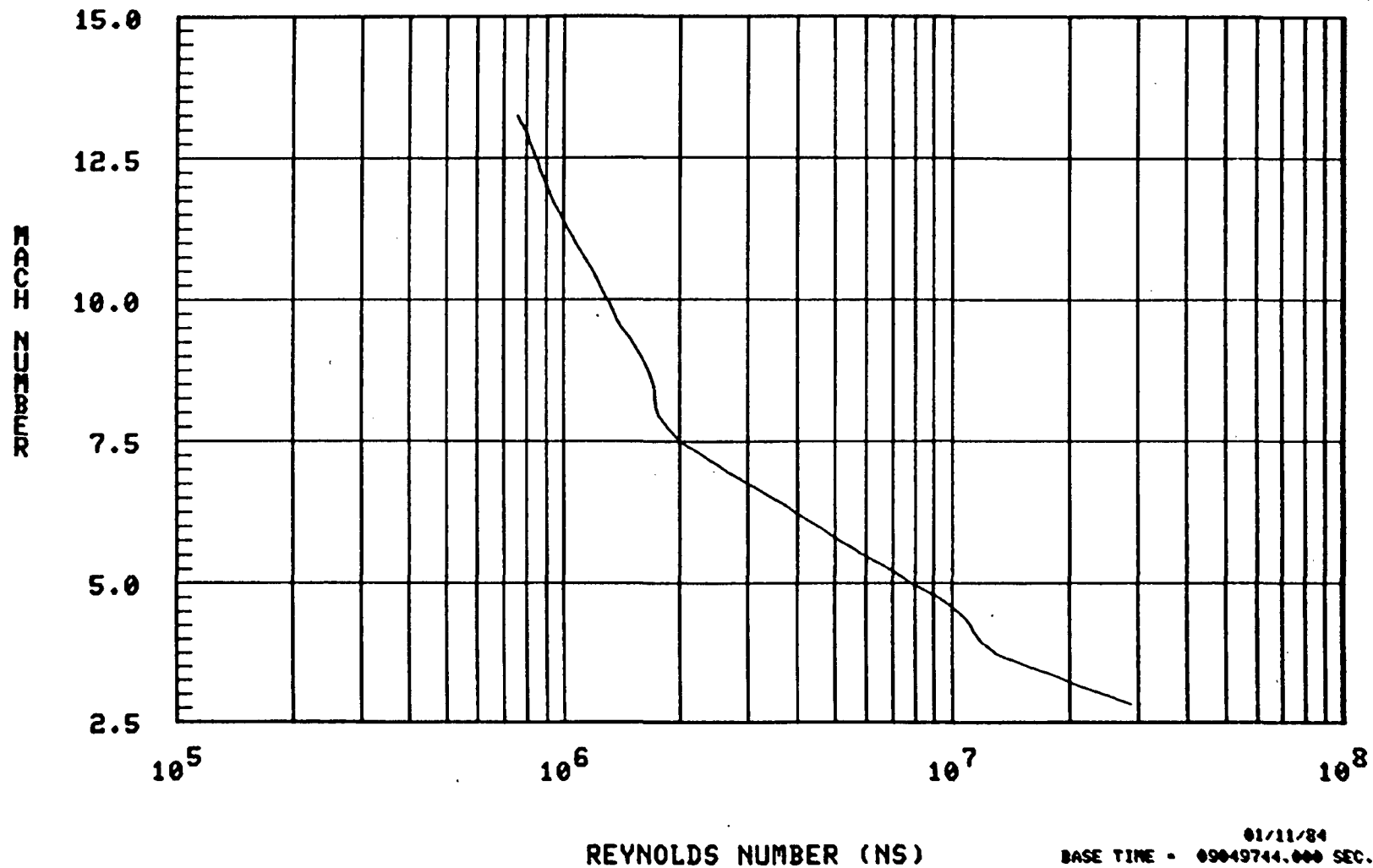
REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-1

1065-1500 SEC

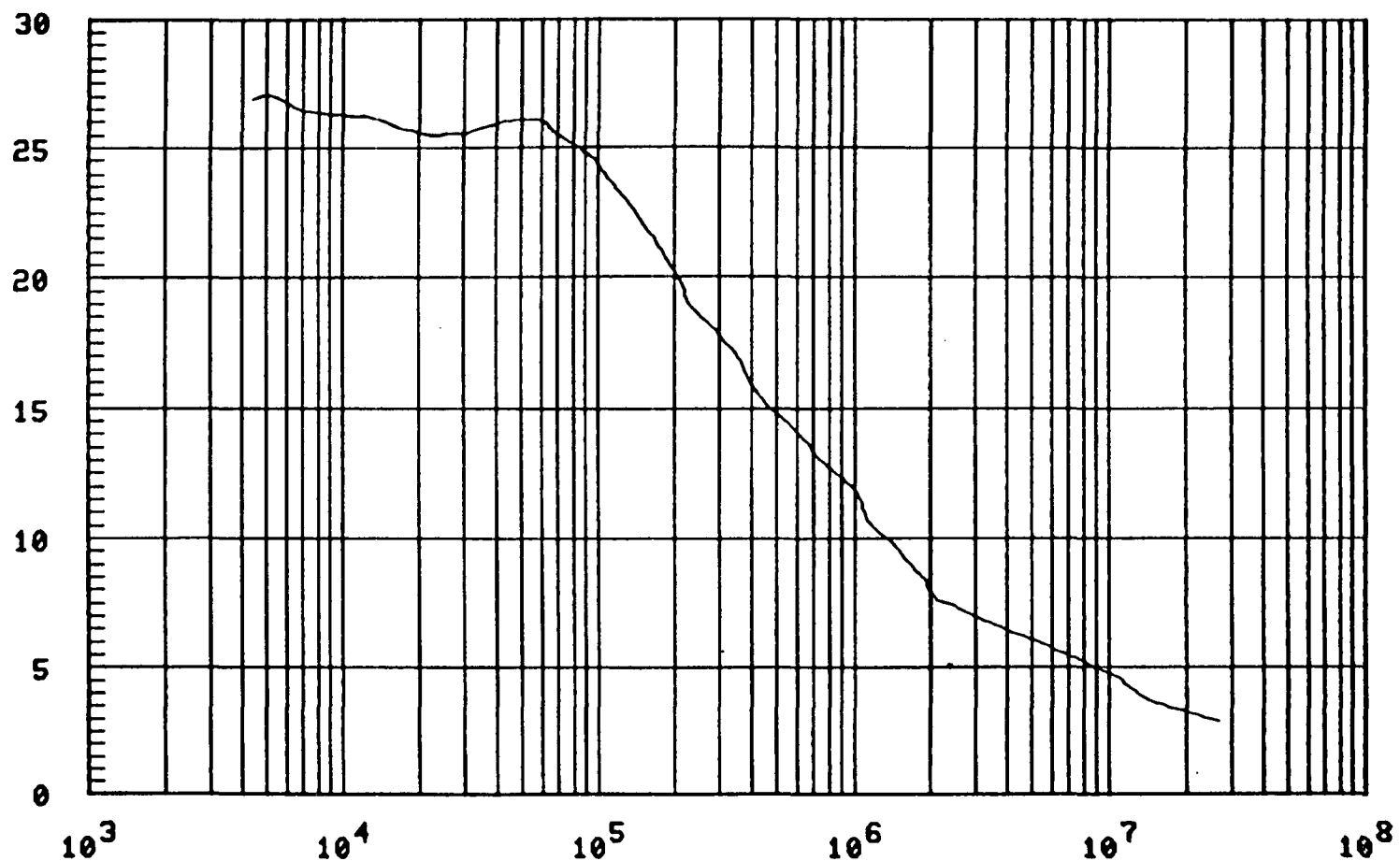


# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-2

200-1530 SEC

REYNOLDS NUMBER



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 27550236.000 SEC.

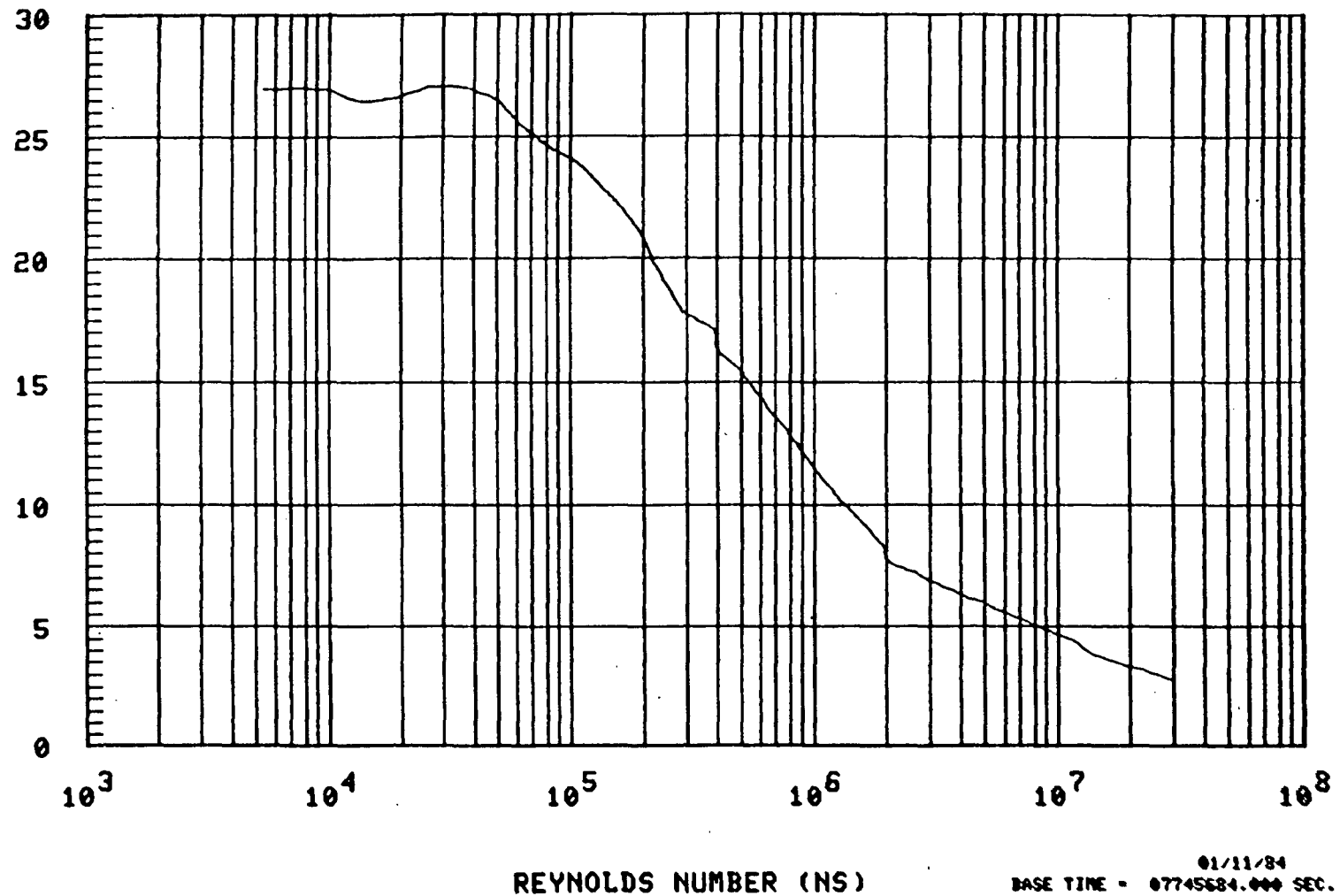
# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-3

200-1440 SEC

LOG SCALE

A-28

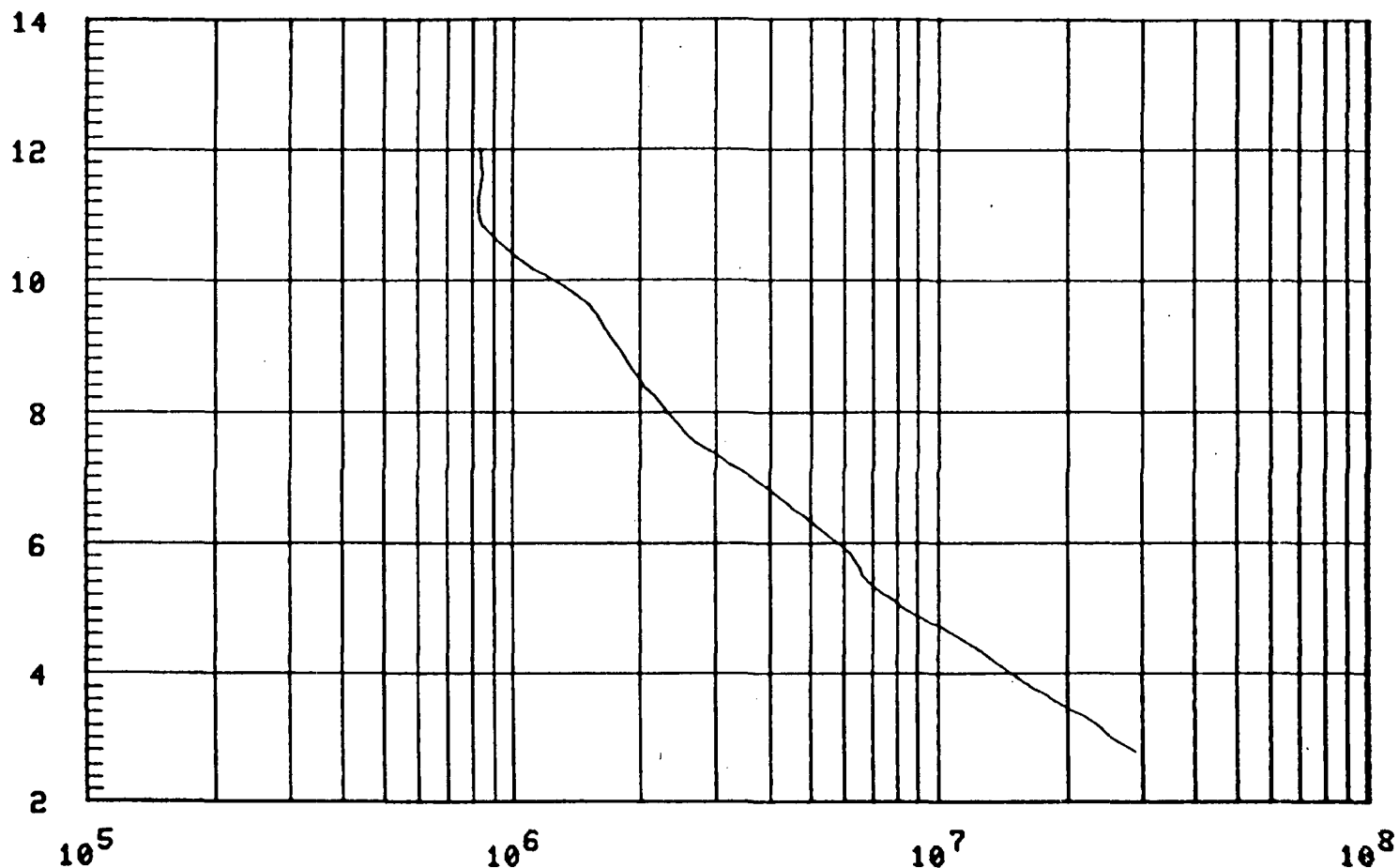


STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-4

965-1360 SEC

ECOT NUMBER



REYNOLDS NUMBER (NS)

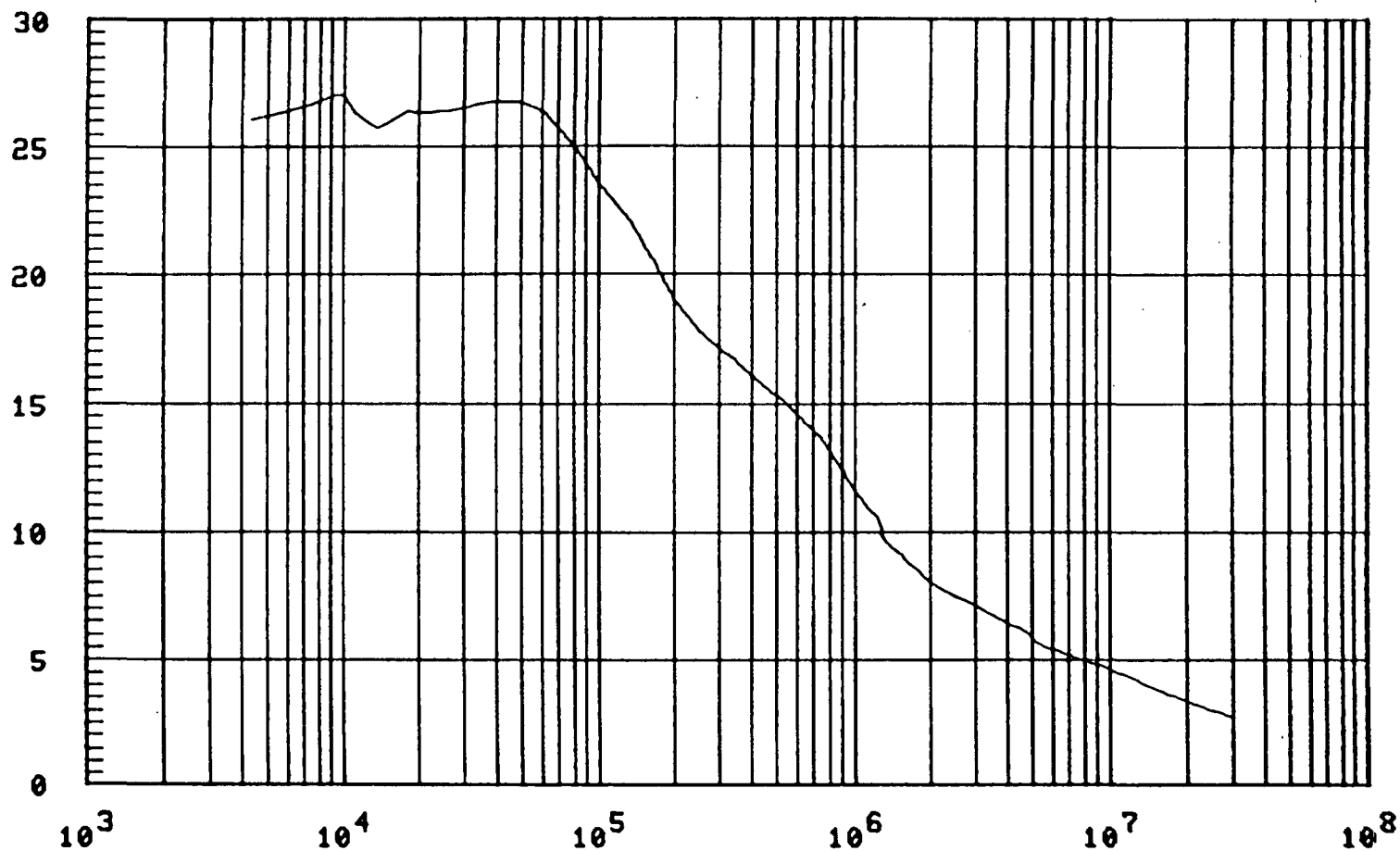
01/12/84  
BASE TIME = 1604423.000 SEC.

# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

STS-5

150-1430 SEC

REYNOLDS NUMBER



REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME - 27698591.000 SEC.

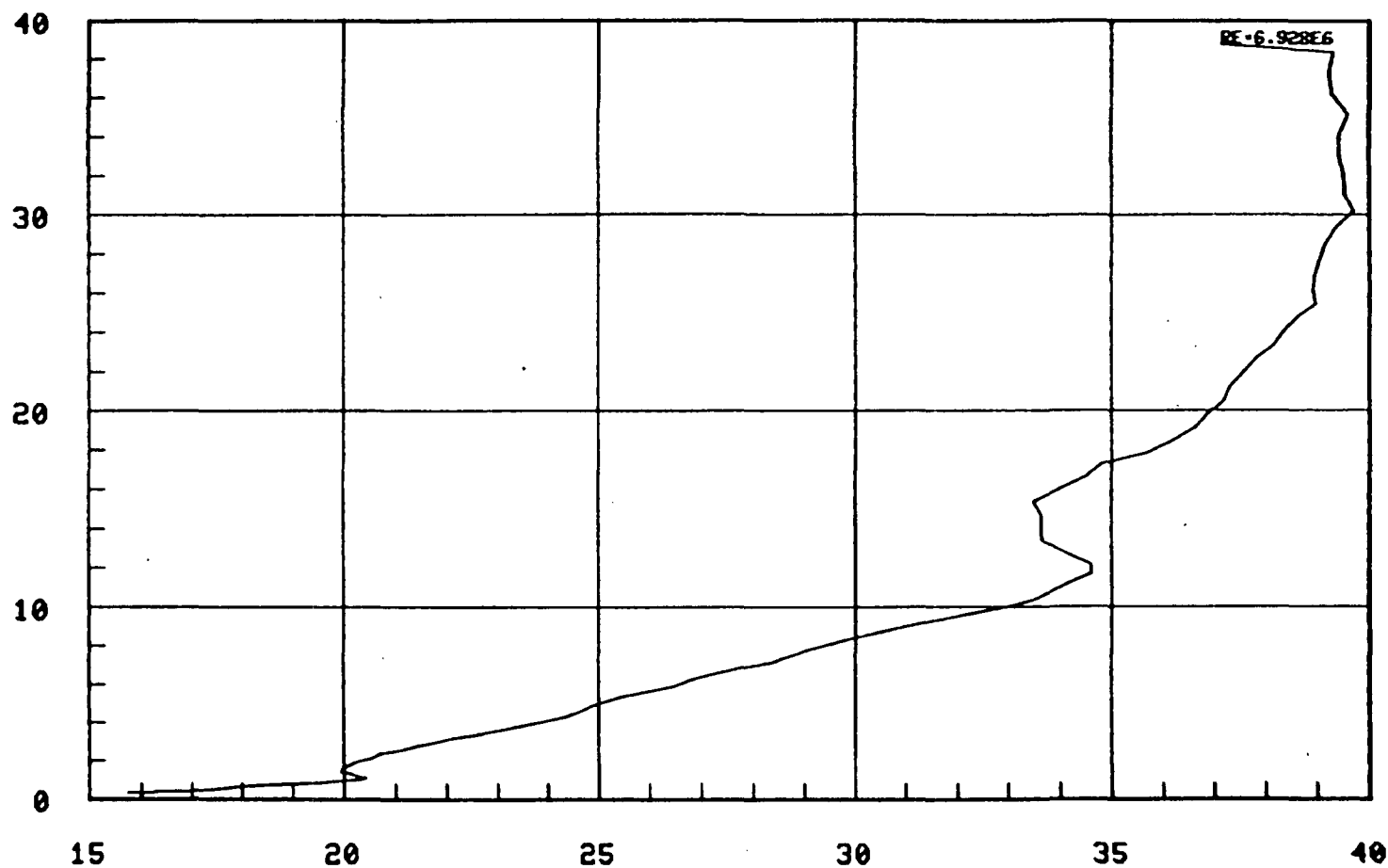


# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

1065-1500 SEC

HEADING RATE - BTU/FT-MIN - SEC



RE-6.928E6

ANGLE-OF-ATTACK - DEG

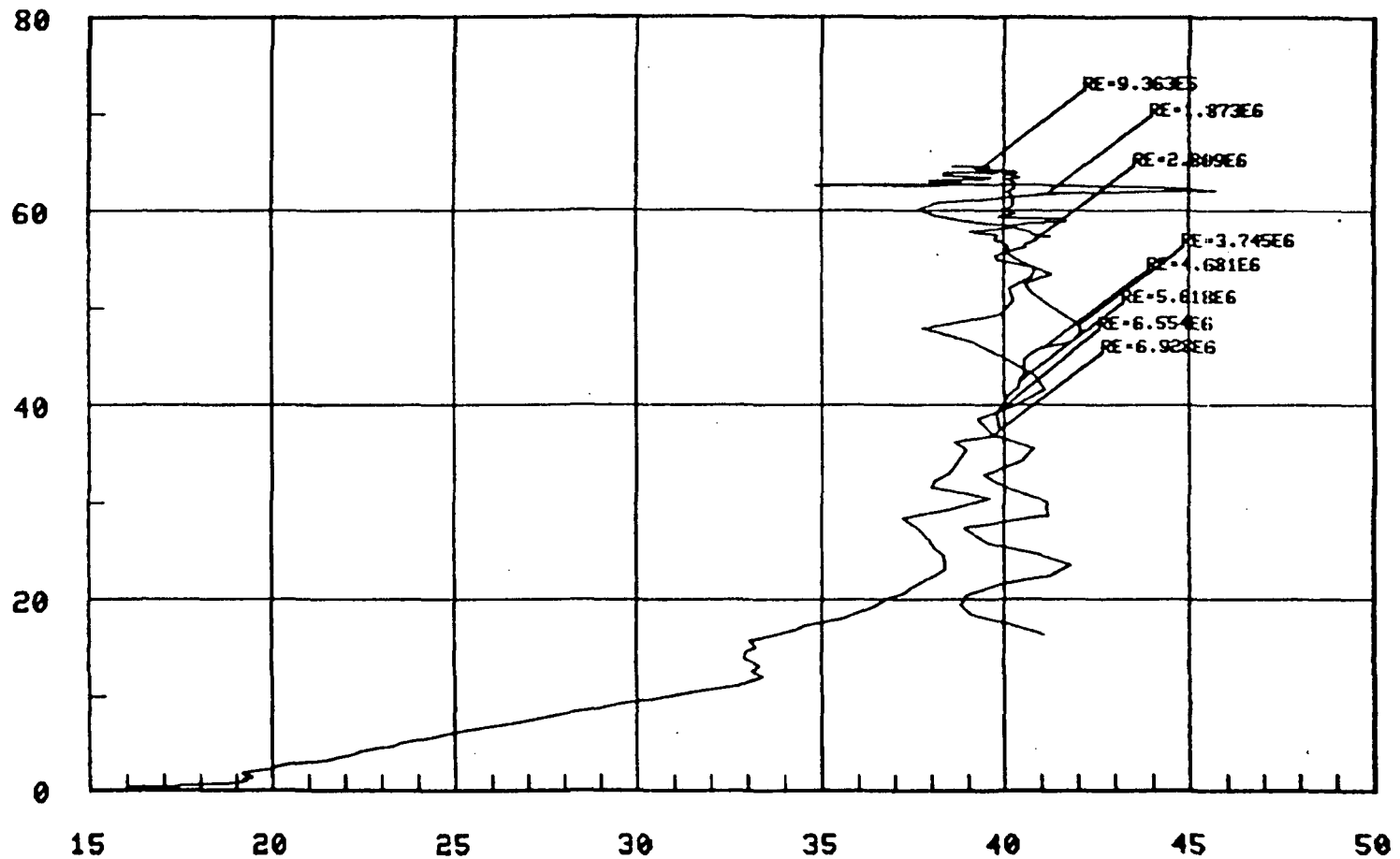
01/11/84  
BASE TIME - 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

200-1530 SEC

HEATING RATE - BTU/FT\*\*2 - SEC



ANGLE-OF-ATTACK - DEG

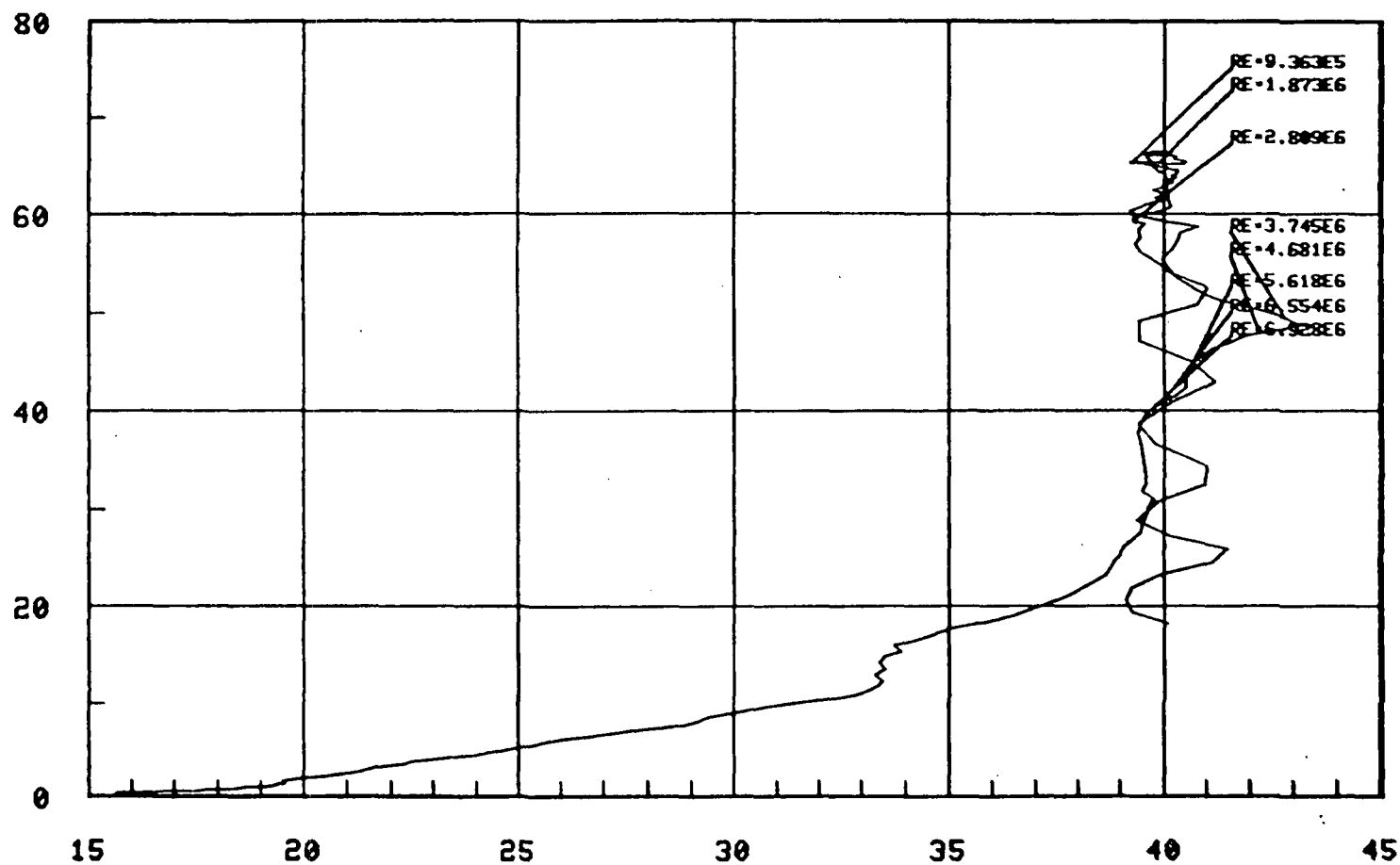
01/11/84  
BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

200-1440 SEC

HEIGHTS QREF - BUILDING - CMG



ANGLE-OF-ATTACK - DEG

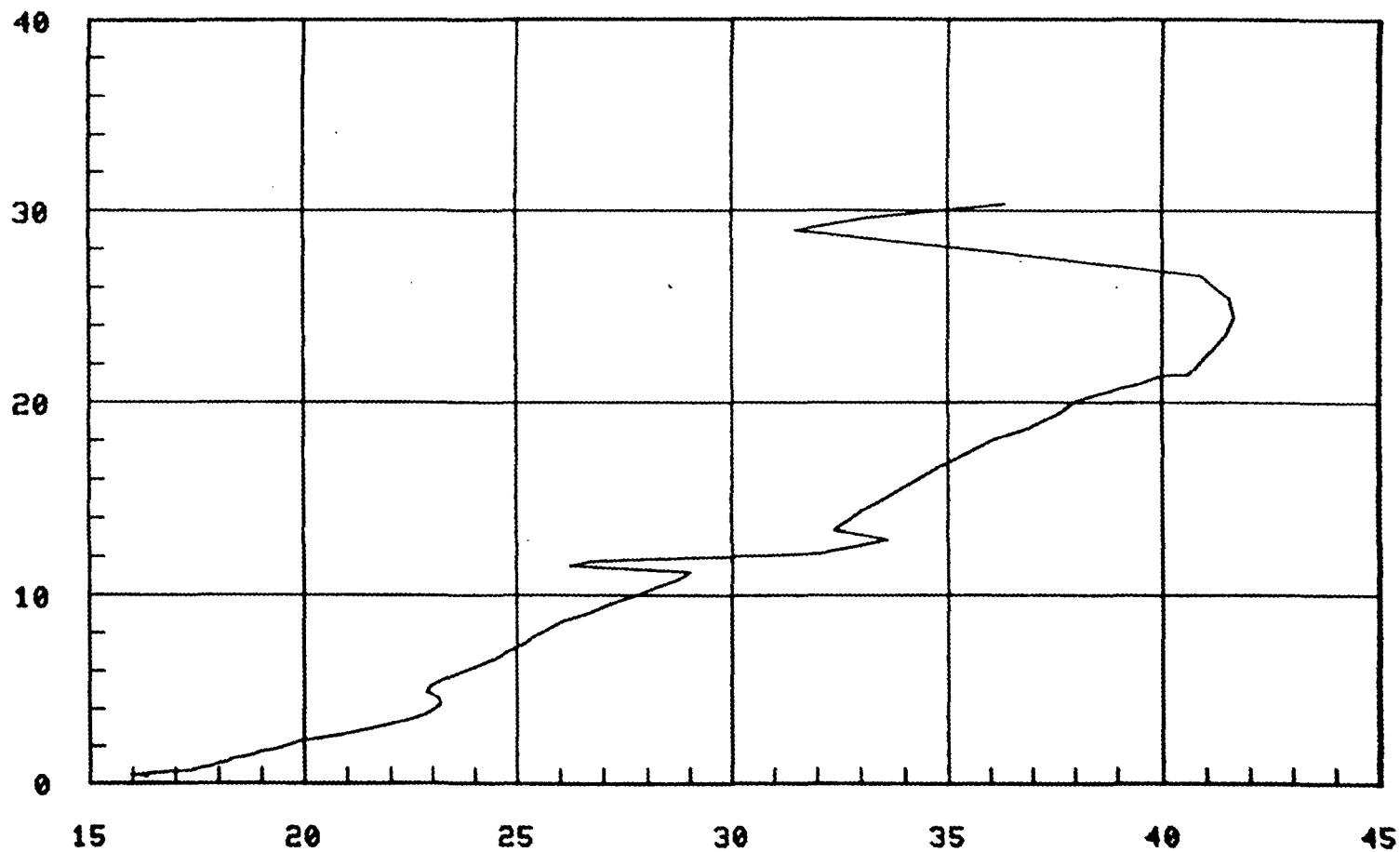
01/11/84  
BASE TIME - 07745634.000 SEC.

# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— QREF

965-1360 SEC

FLIGHTING REF - BRONZILLUM - SMC



ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME - 16040423.000 SEC.

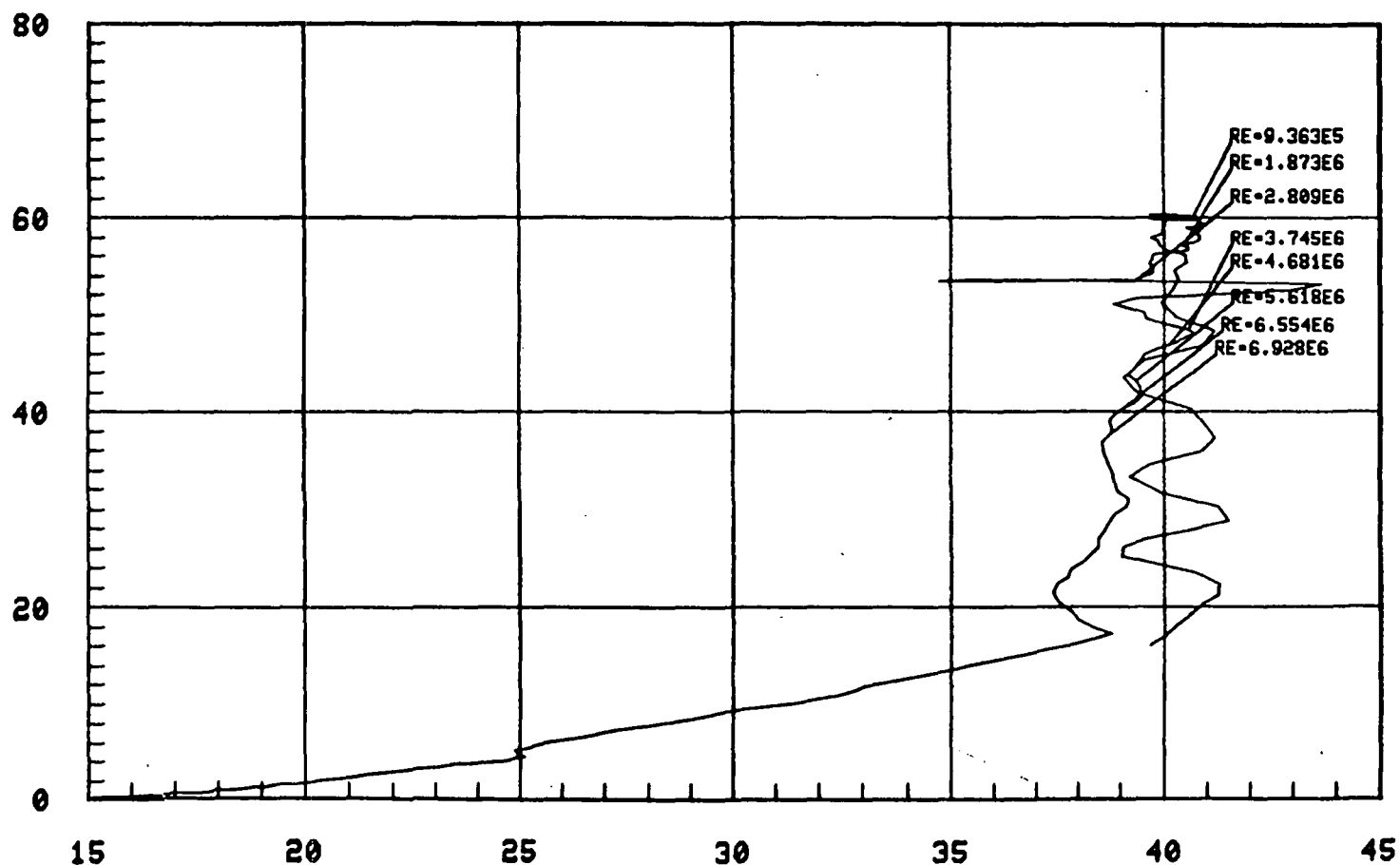
# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

150-1430 SEC

LOADING - 100% - 100% - 100%

A-35



ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME - 27698591.000 SEC.

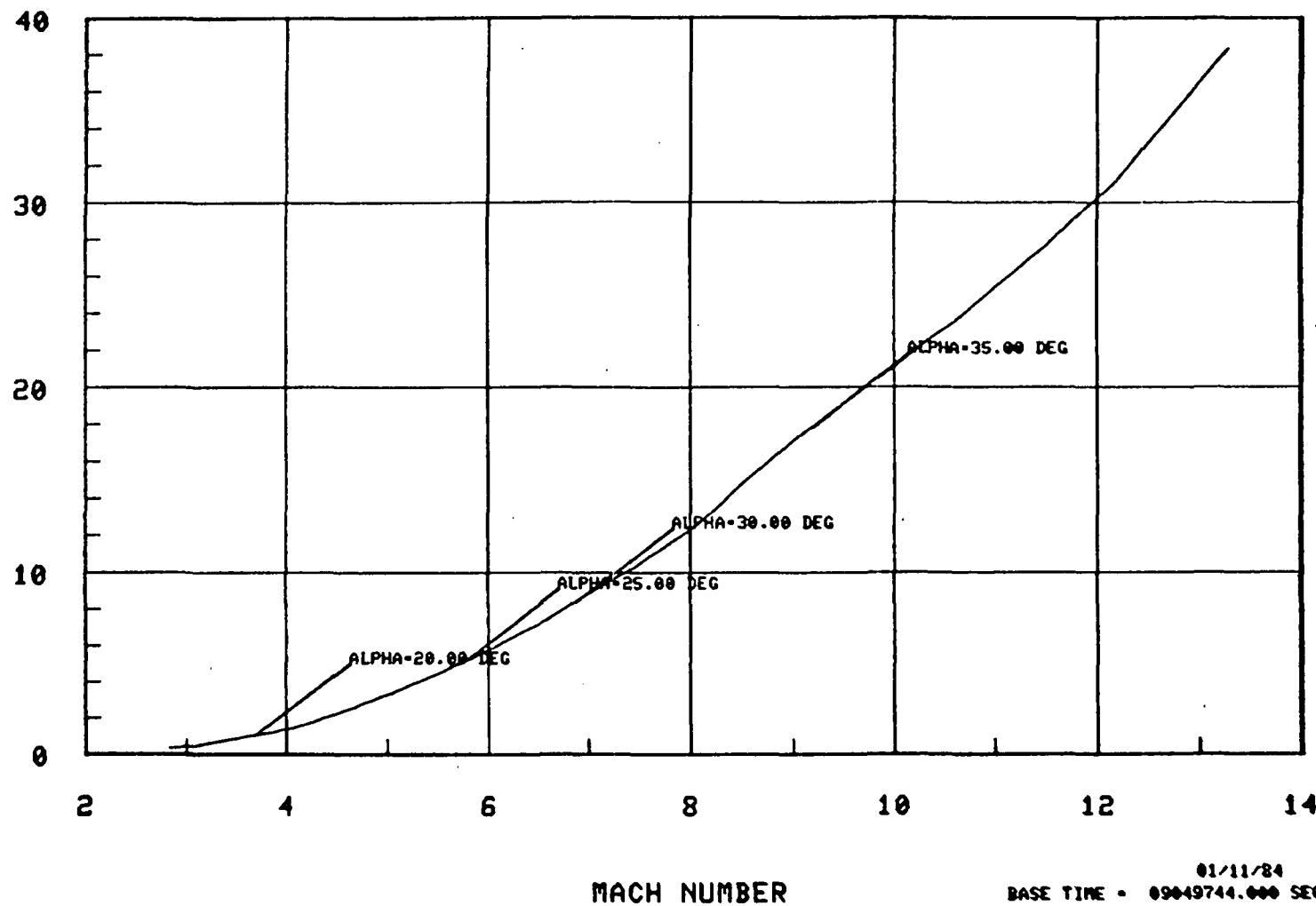
# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

1065-1500 SEC

HEATING RATE - BTU/IN<sup>2</sup>-MIN - SEC

A-36

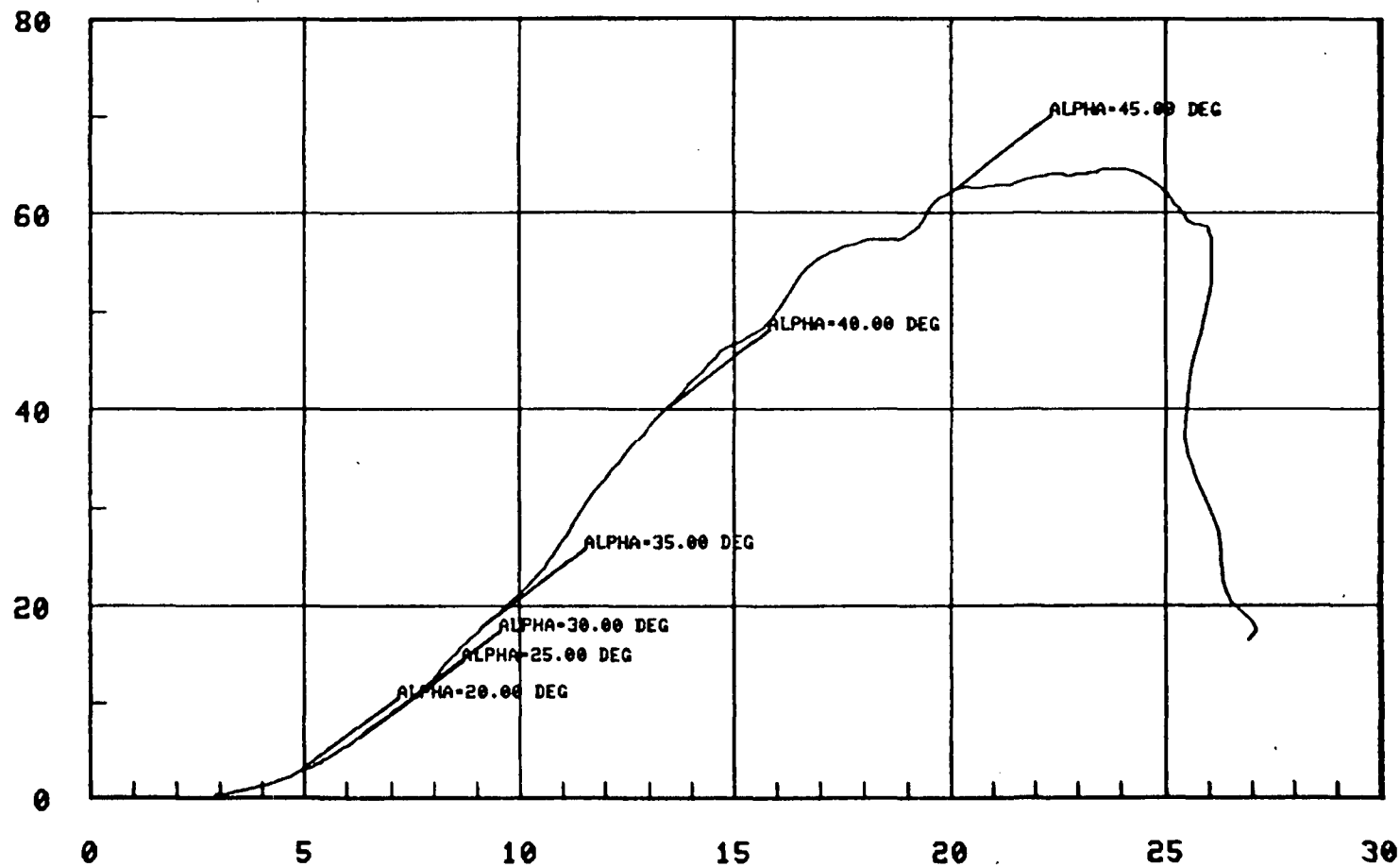


# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

200-1530 SEC

HEATING RATE - BTU/FT<sup>2</sup> - SEC



MACH NUMBER

01/11/84  
BASE TIME - 27550236.000 SEC.

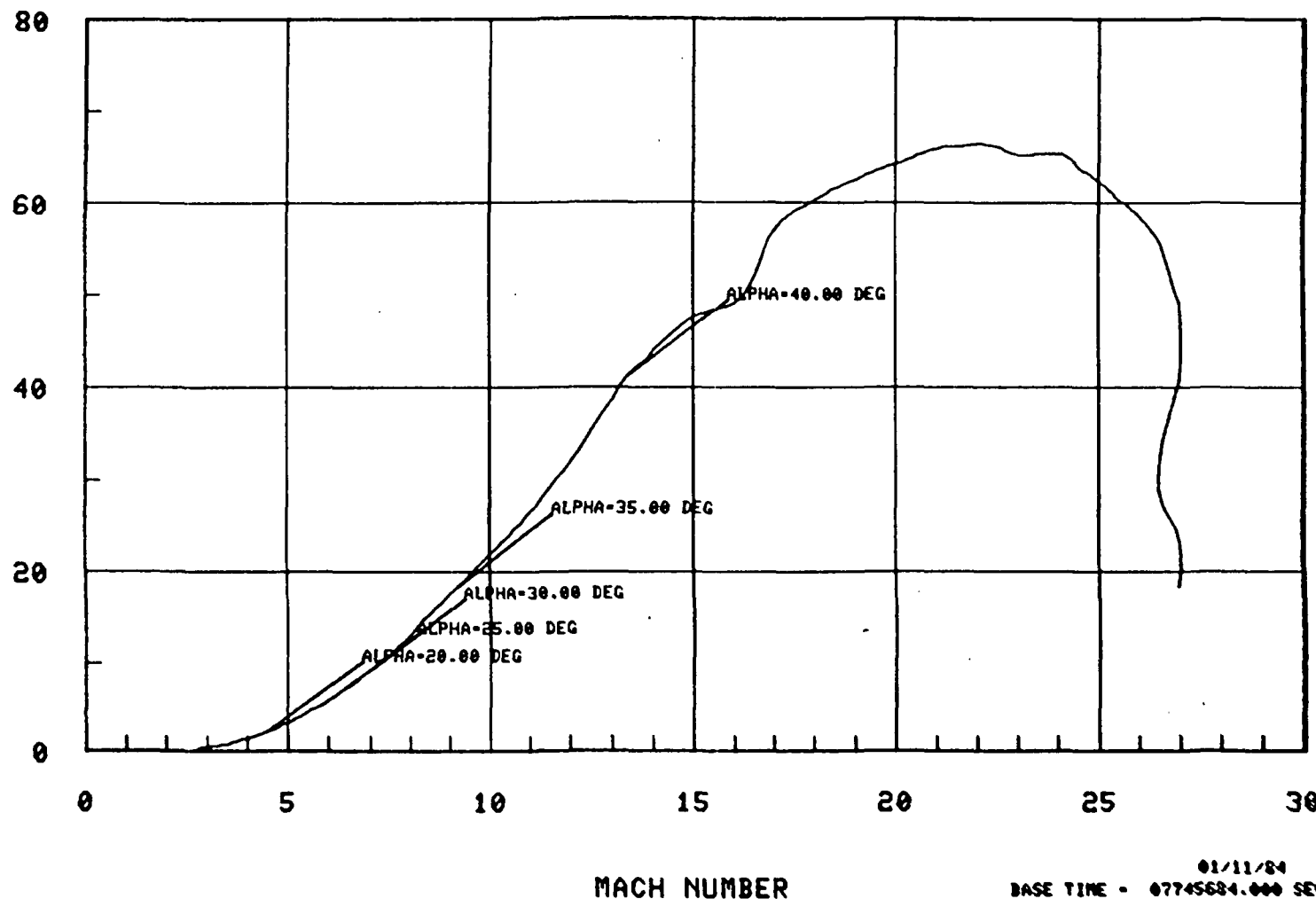
# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

200-1440 SEC

HEADING RATE - 1000 FT/SEC

A-38



01/11/84

BASE TIME - 07745684.000 SEC.

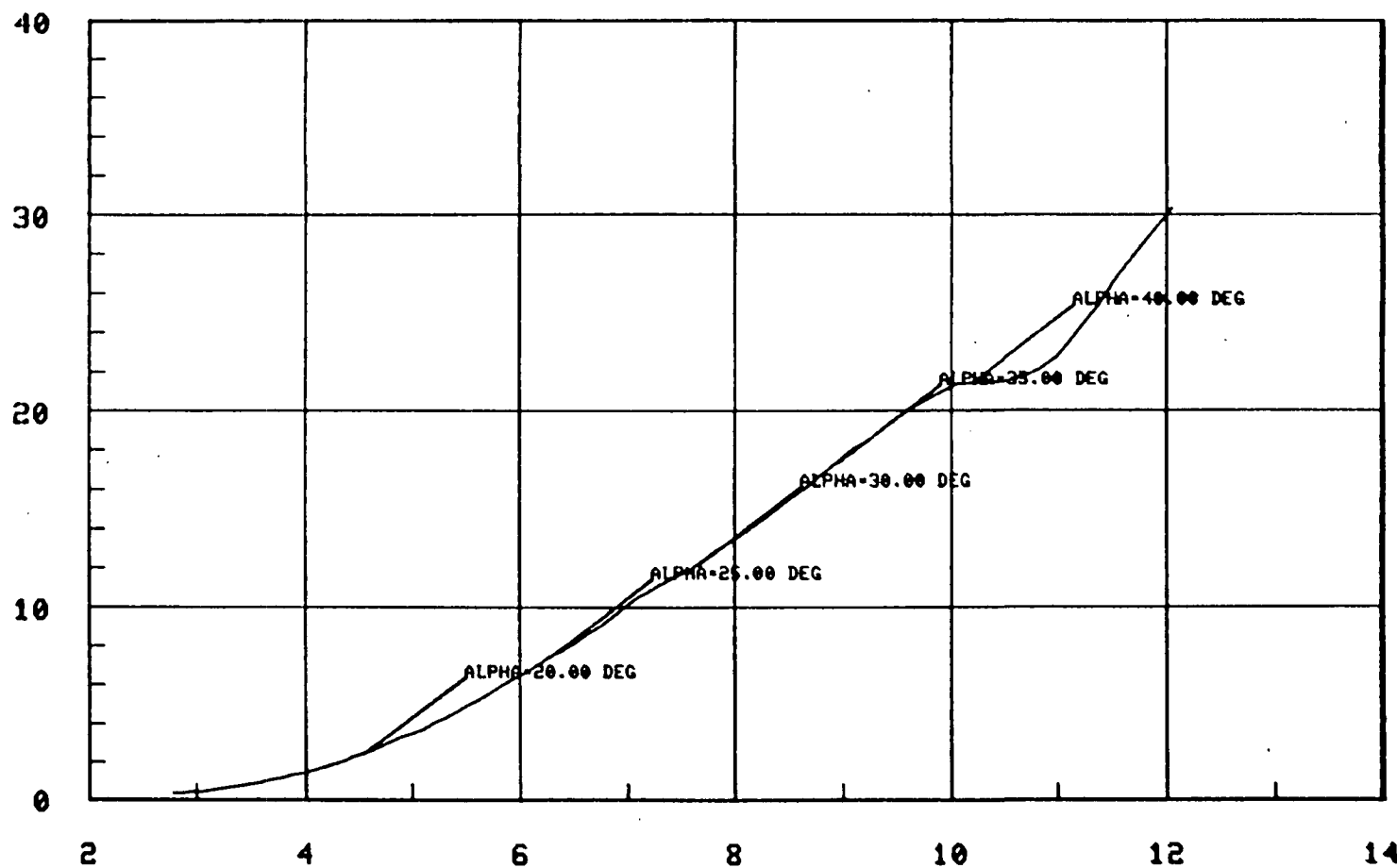


# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

965-1360 SEC

THREATING RATE - BTU/FT-MIN - SEC



MACH NUMBER

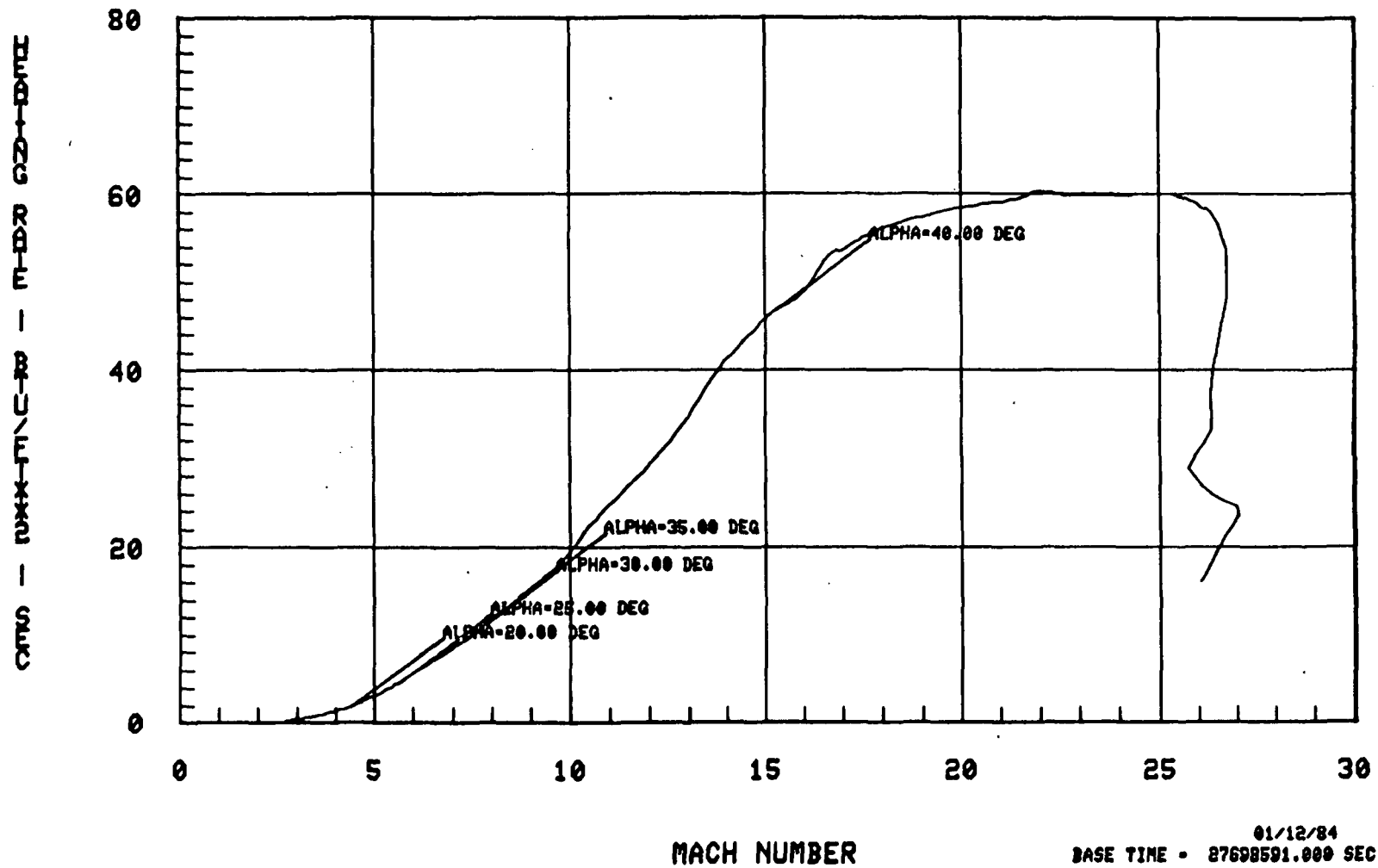
01/12/84

BASE TIME - 10040423.000 SEC.

STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z-400 & Z-440

**QREF**

**150-1430 SEC**



01/12/84  
BASE TIME - 27698591.000 SEC.

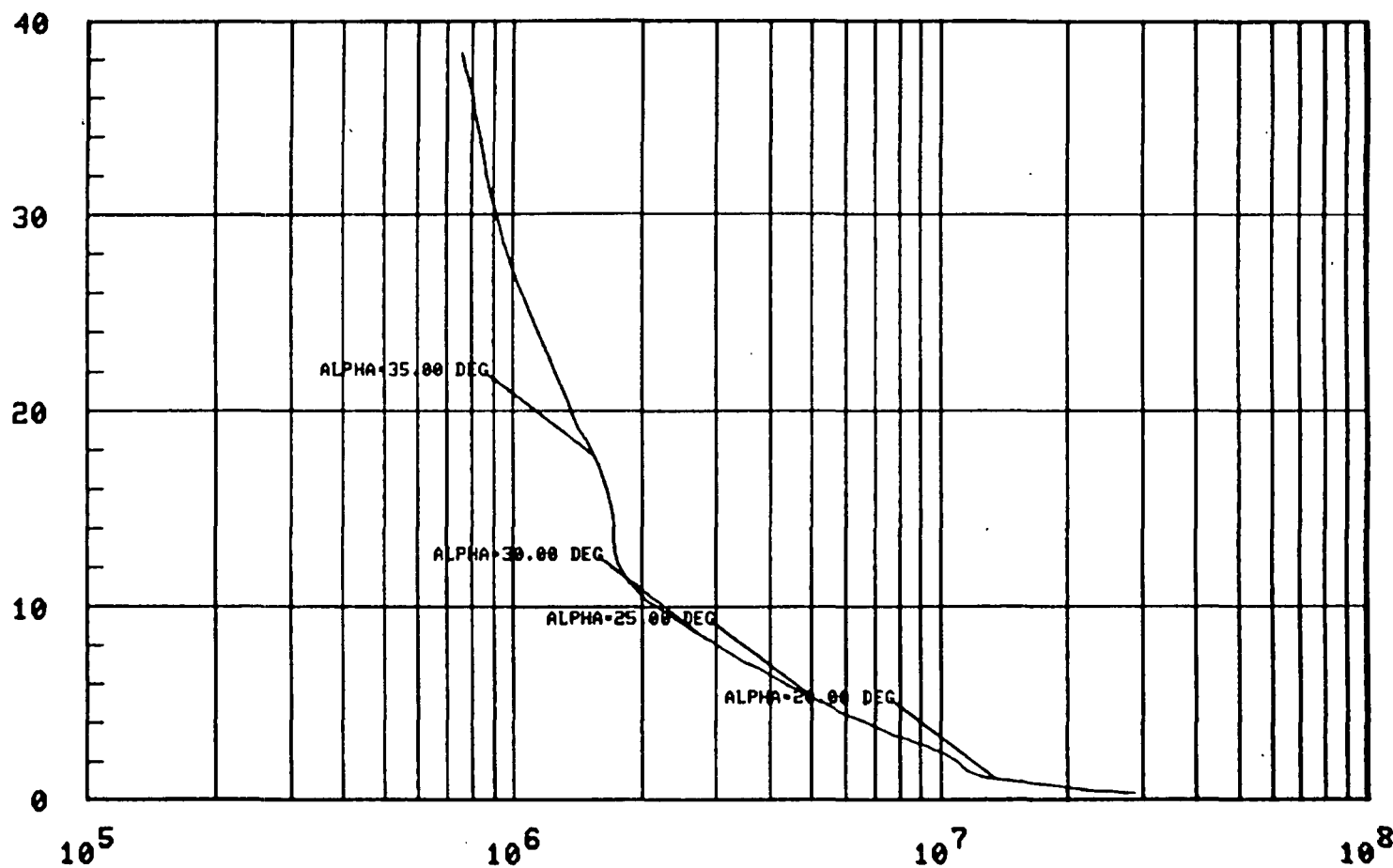
# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— QREF

1065-1500 SEC

BUDDING RATE - BULL/ELM - CMC

A-47



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 09049744.000 SEC.

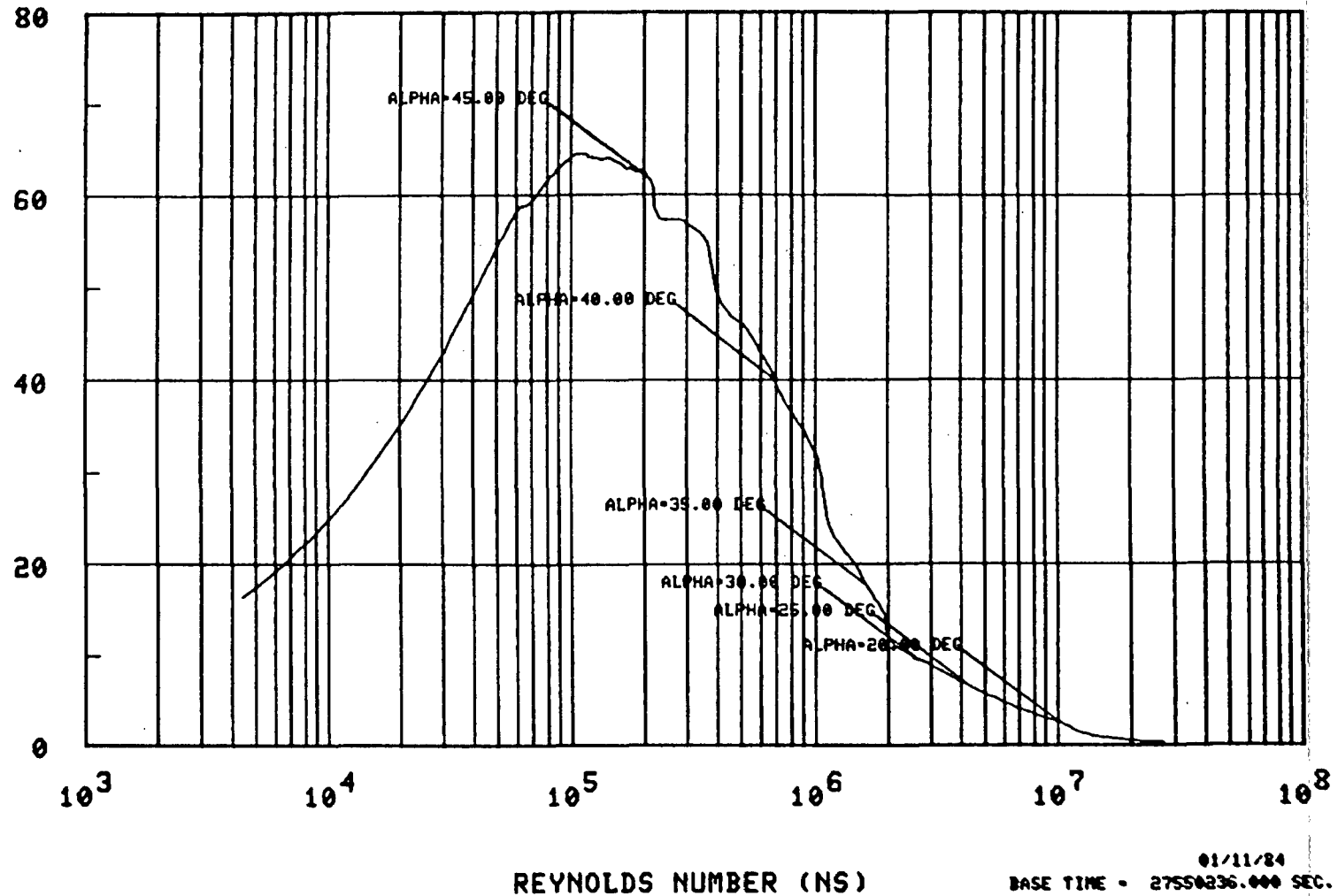
# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

200-1530 SEC

INTEGRATING RATE - 100/SEC

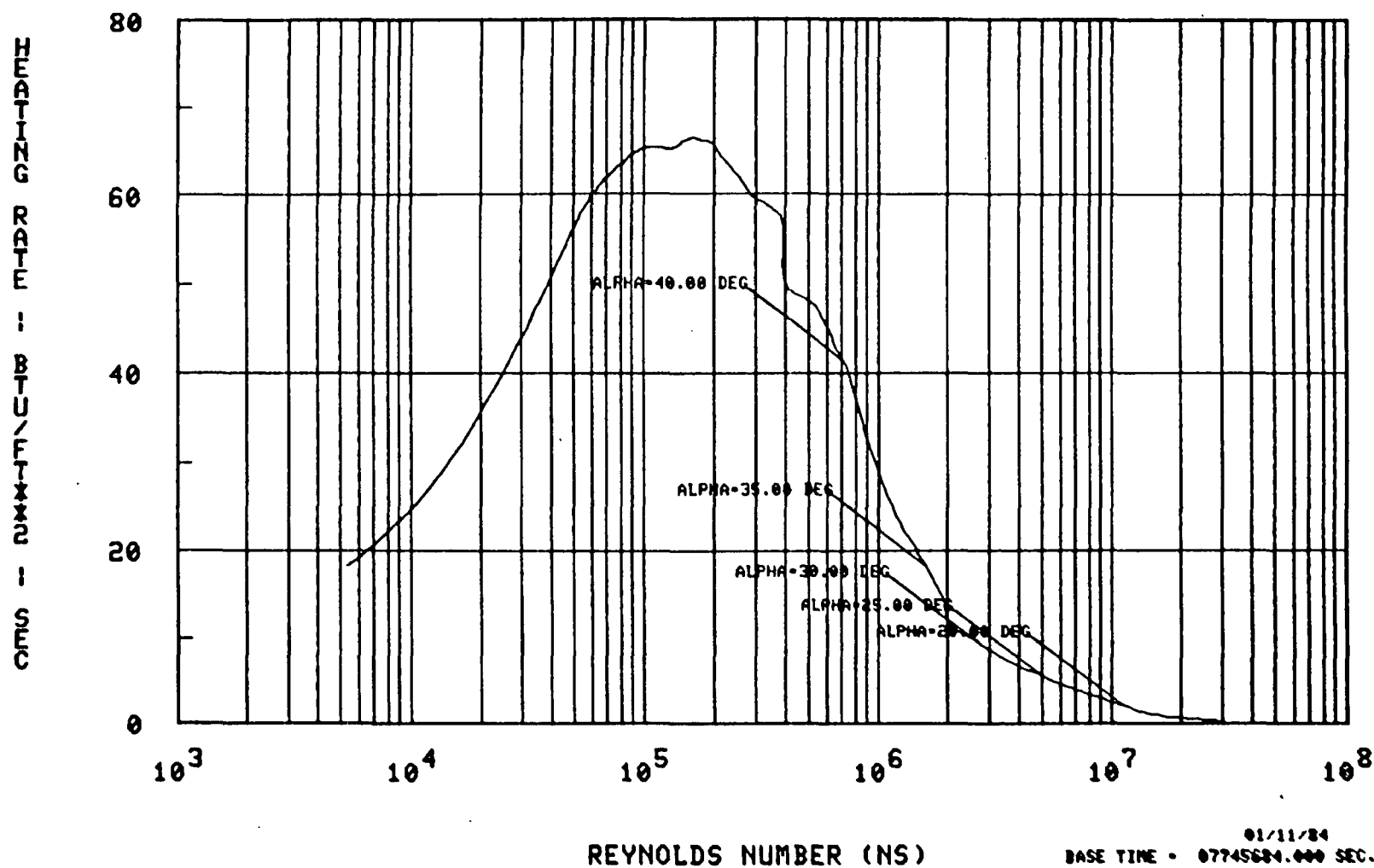
A-42



# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

200-1440 SEC



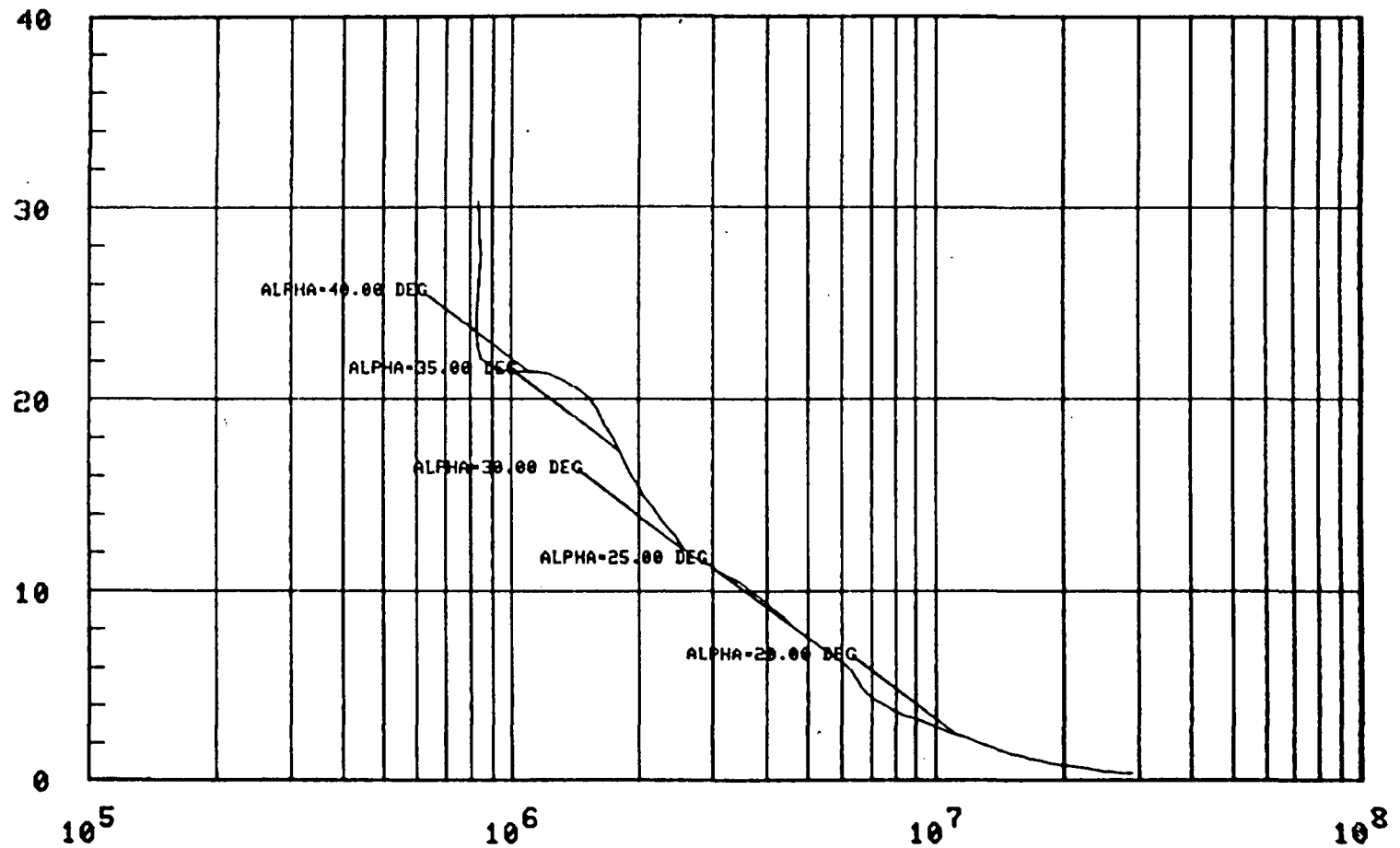
# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

965-1360 SEC

A-44

HEATING RATE - BTU/FT<sup>2</sup> - SEC



REYNOLDS NUMBER (NS)

01/18/84  
BASE TIME - 16040423.000 SEC.

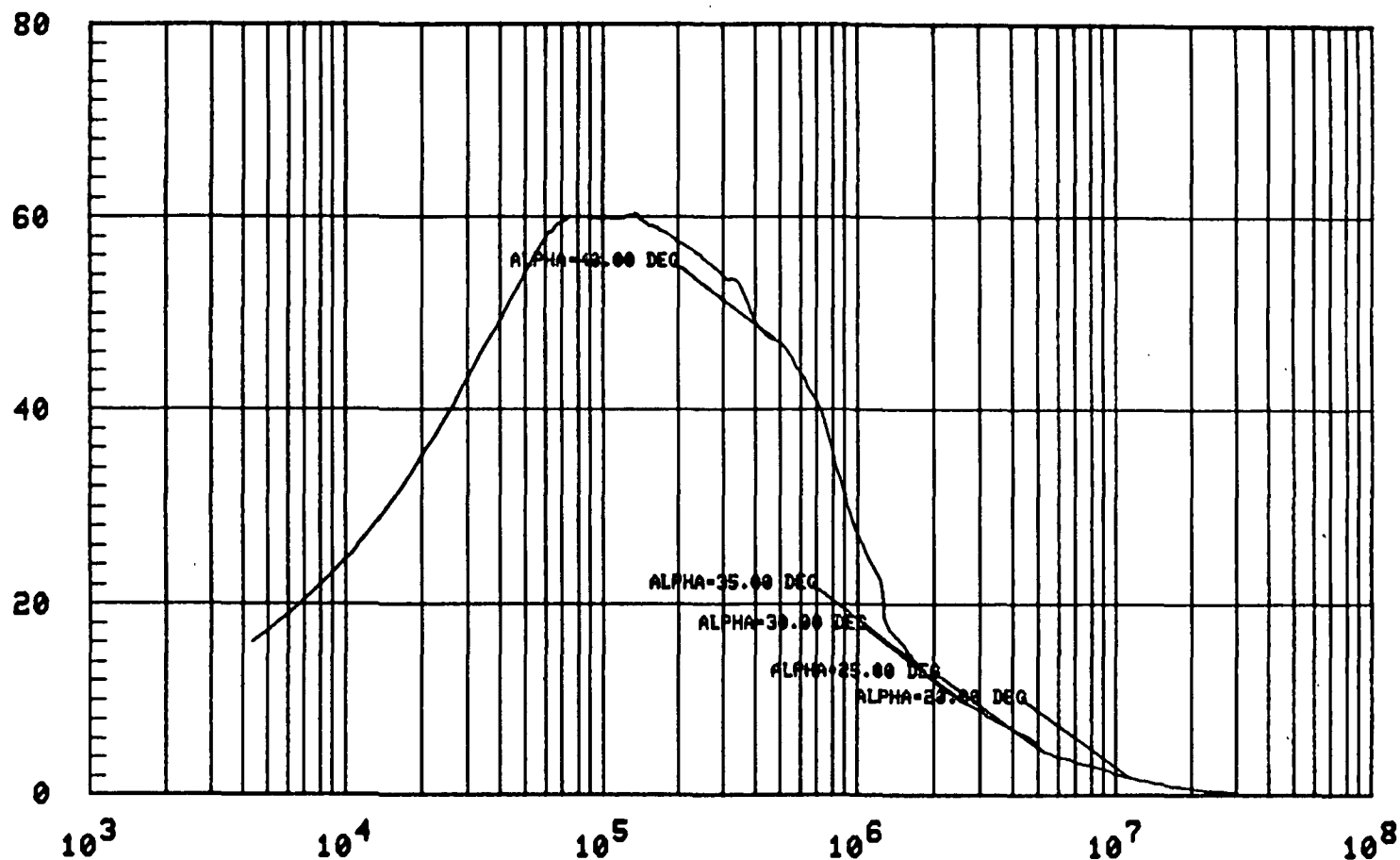
# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF

150-1430 SEC

DOWN-200 RE-11 - 00-11-11-11 - 00-11-11-11

A-45

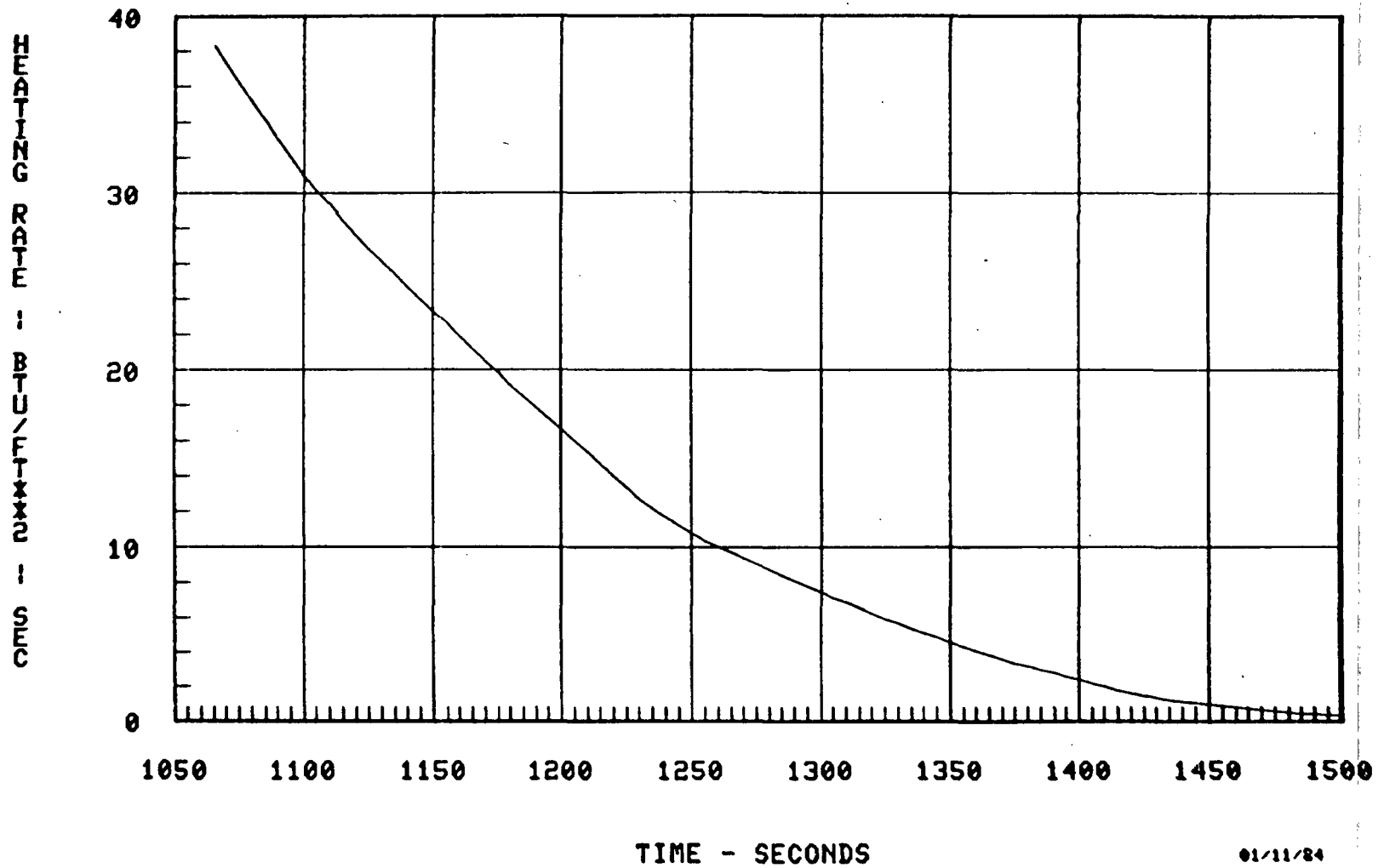


REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF



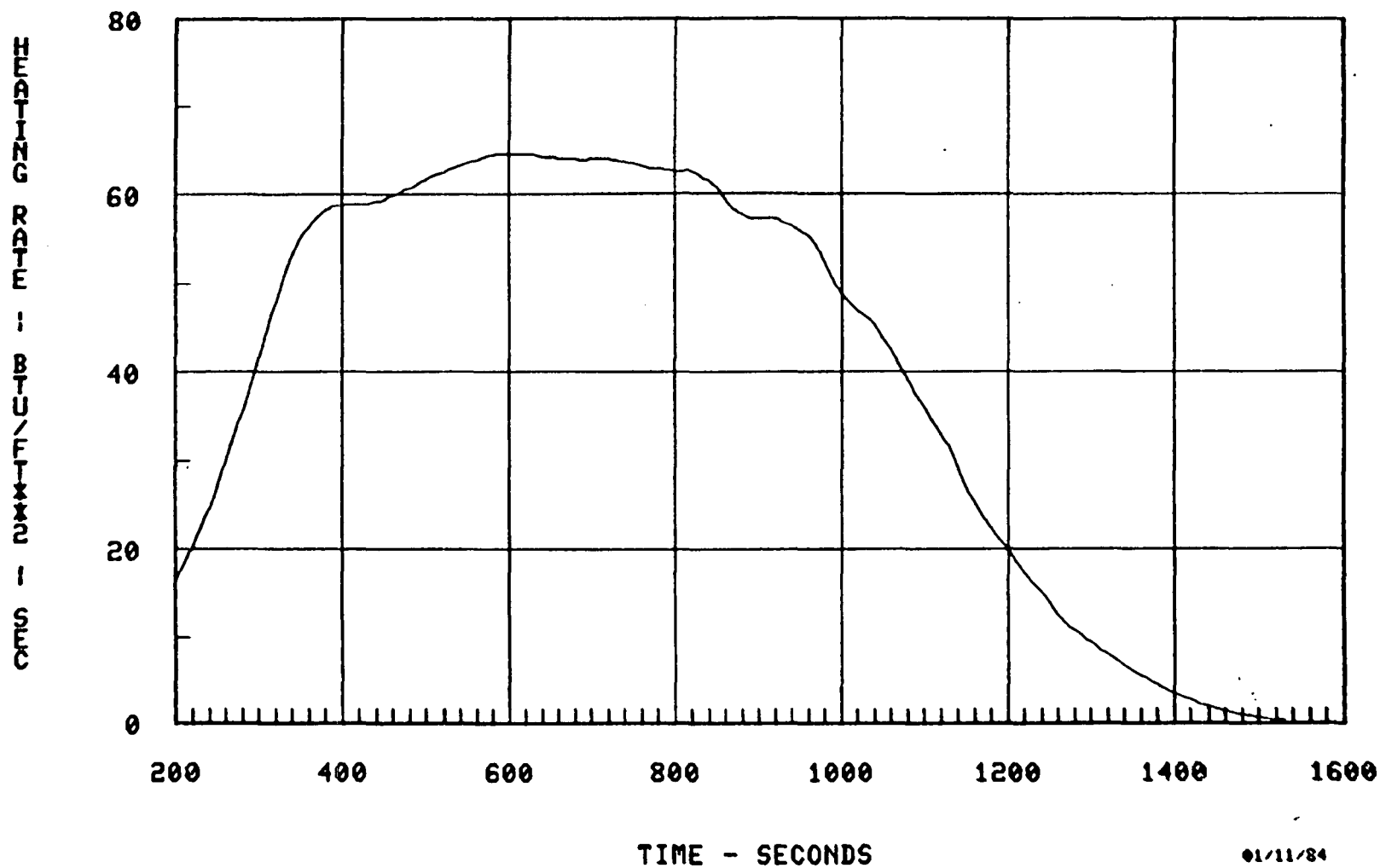
A-46

01/11/84



STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— QREF

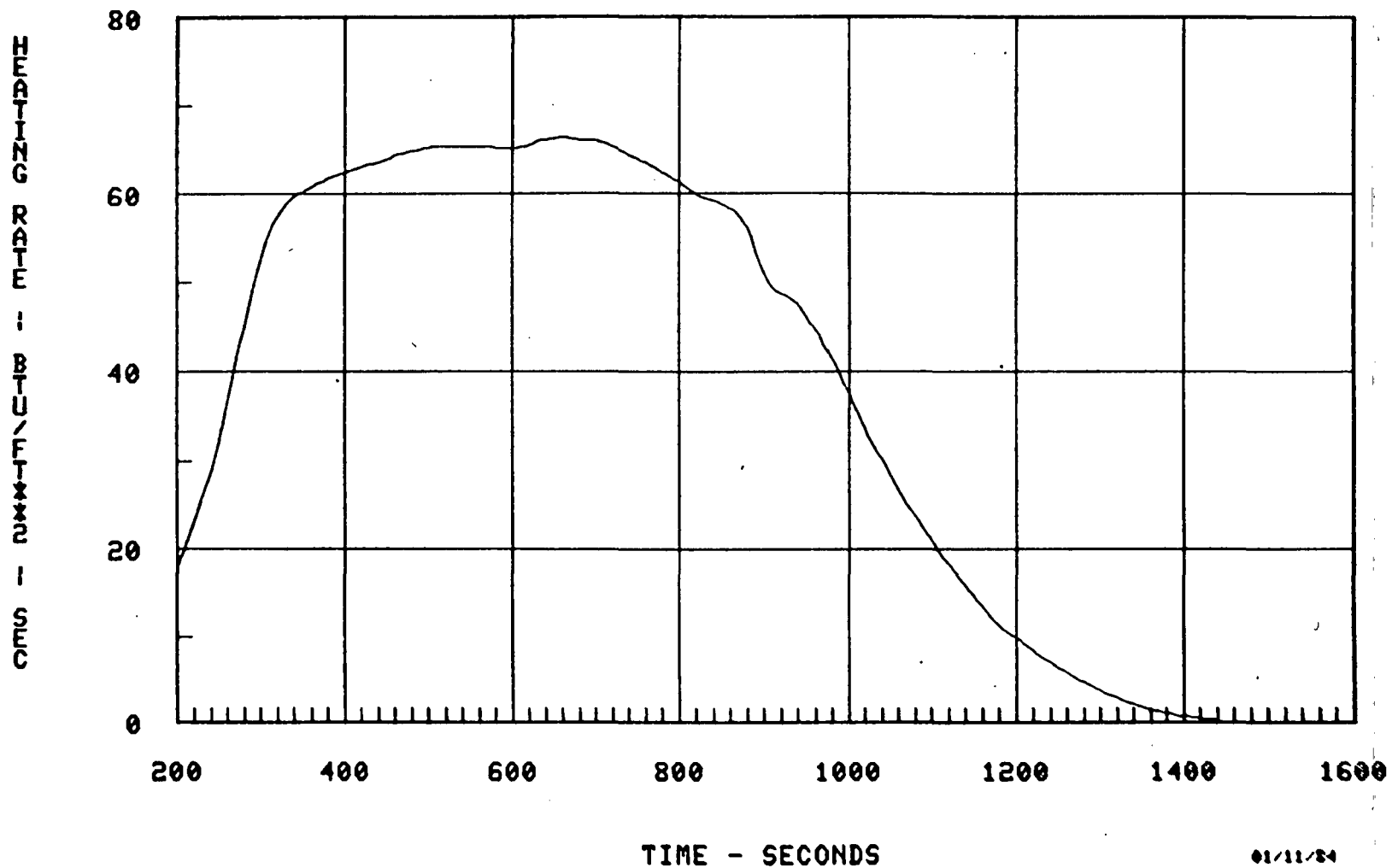


A-47

01/11/84

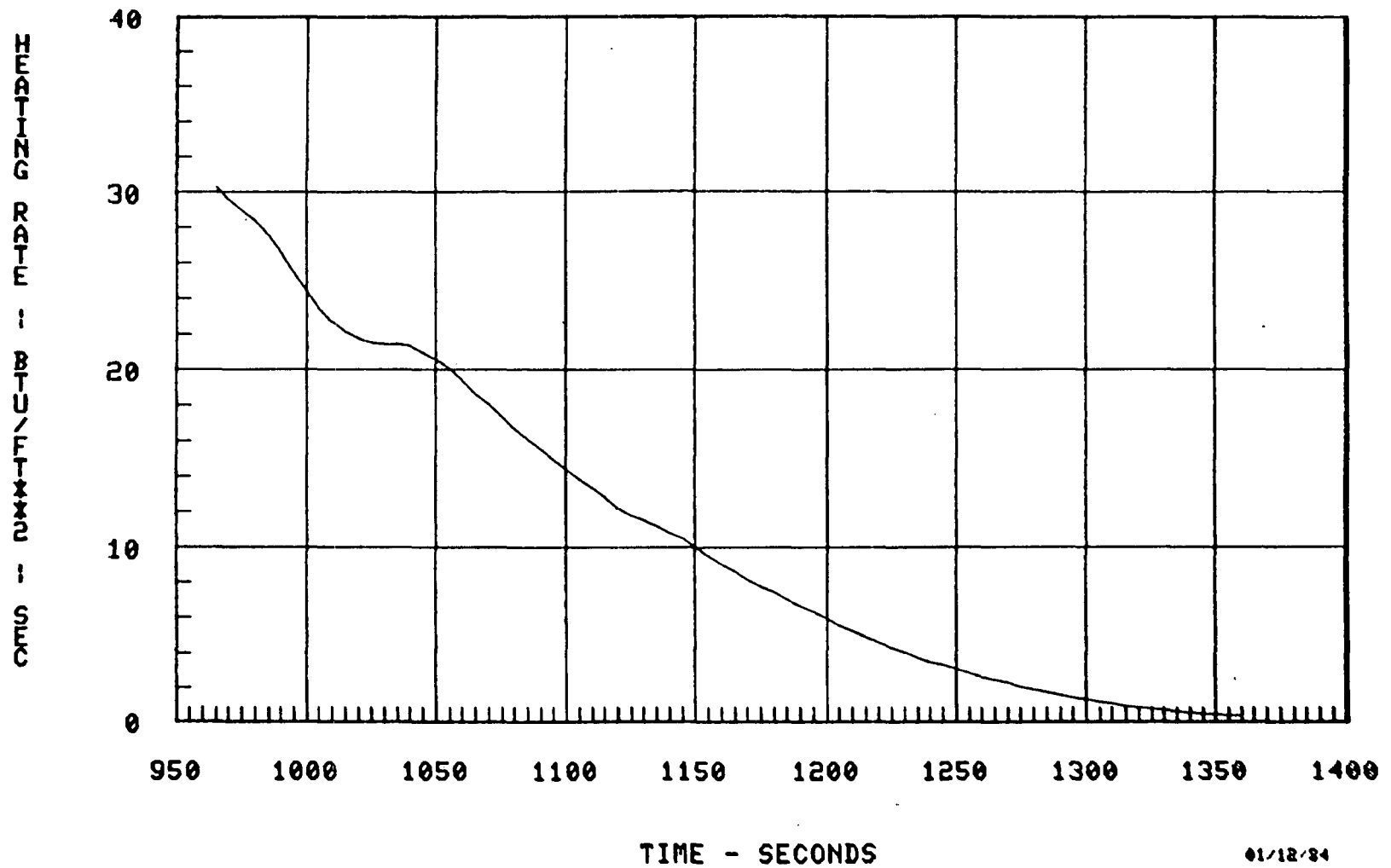
STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— GREF



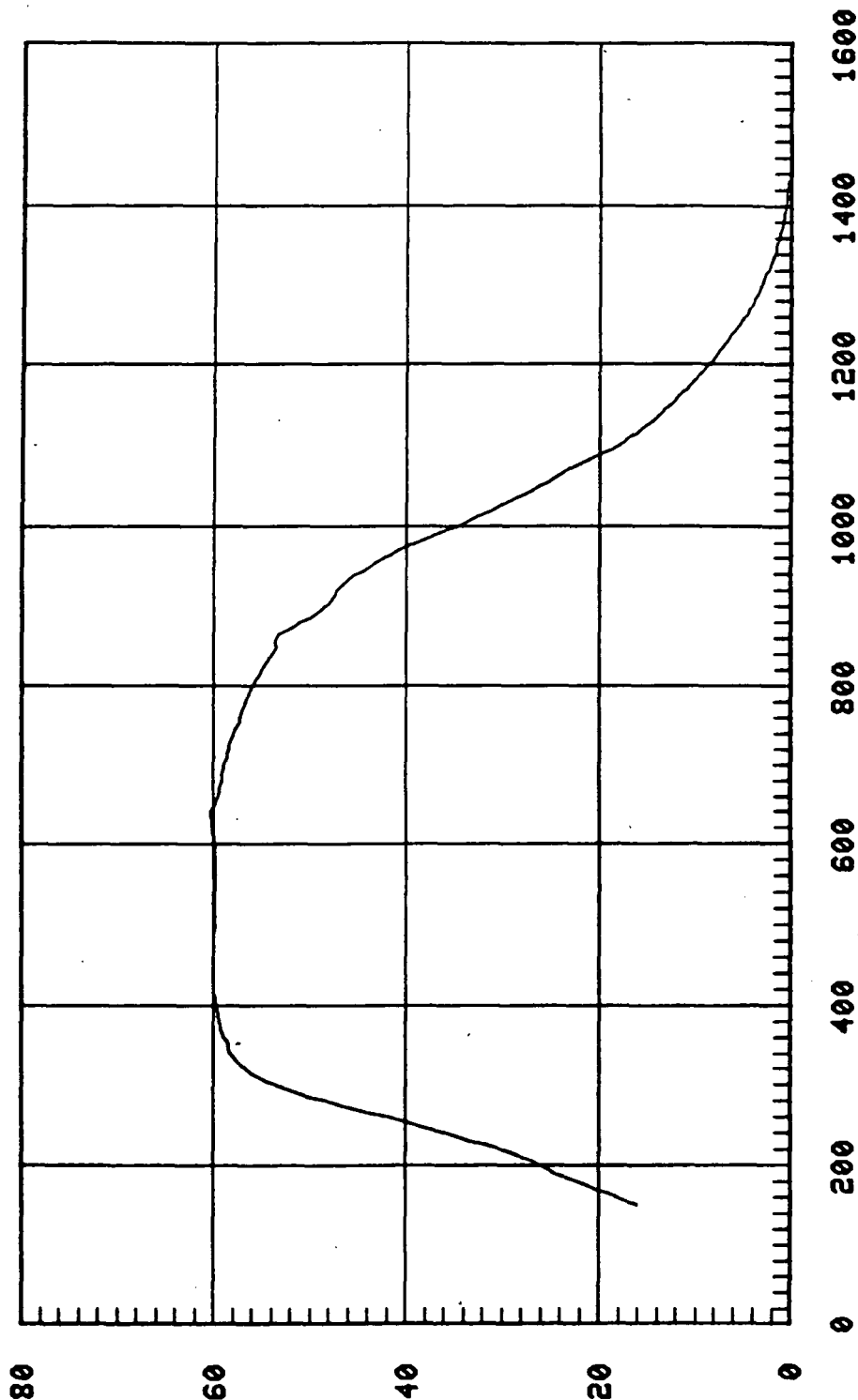
STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

QREF



# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

REF



TIME - SECONDS

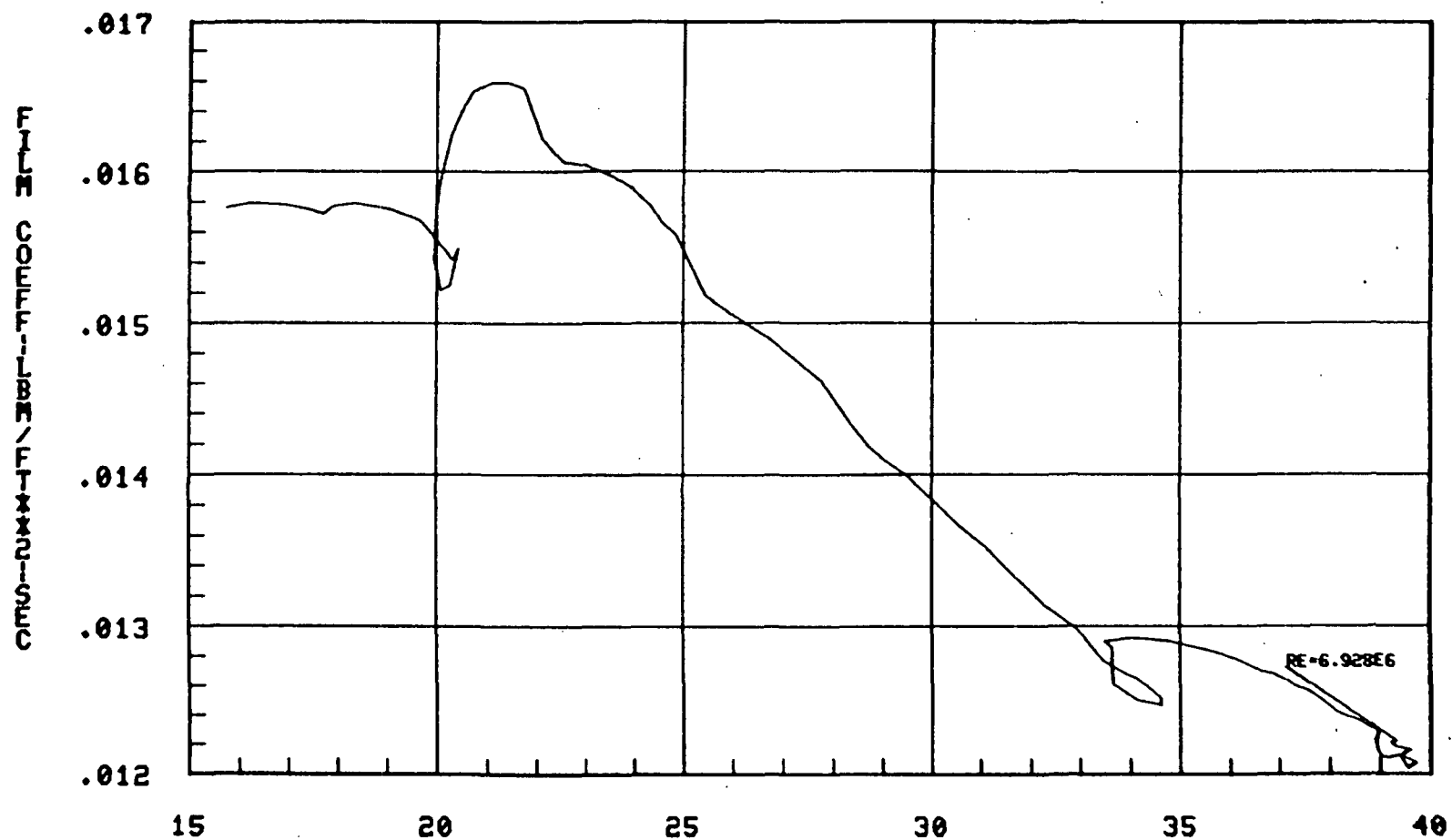
01/12/84

STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

1065-1500 SEC



A-51

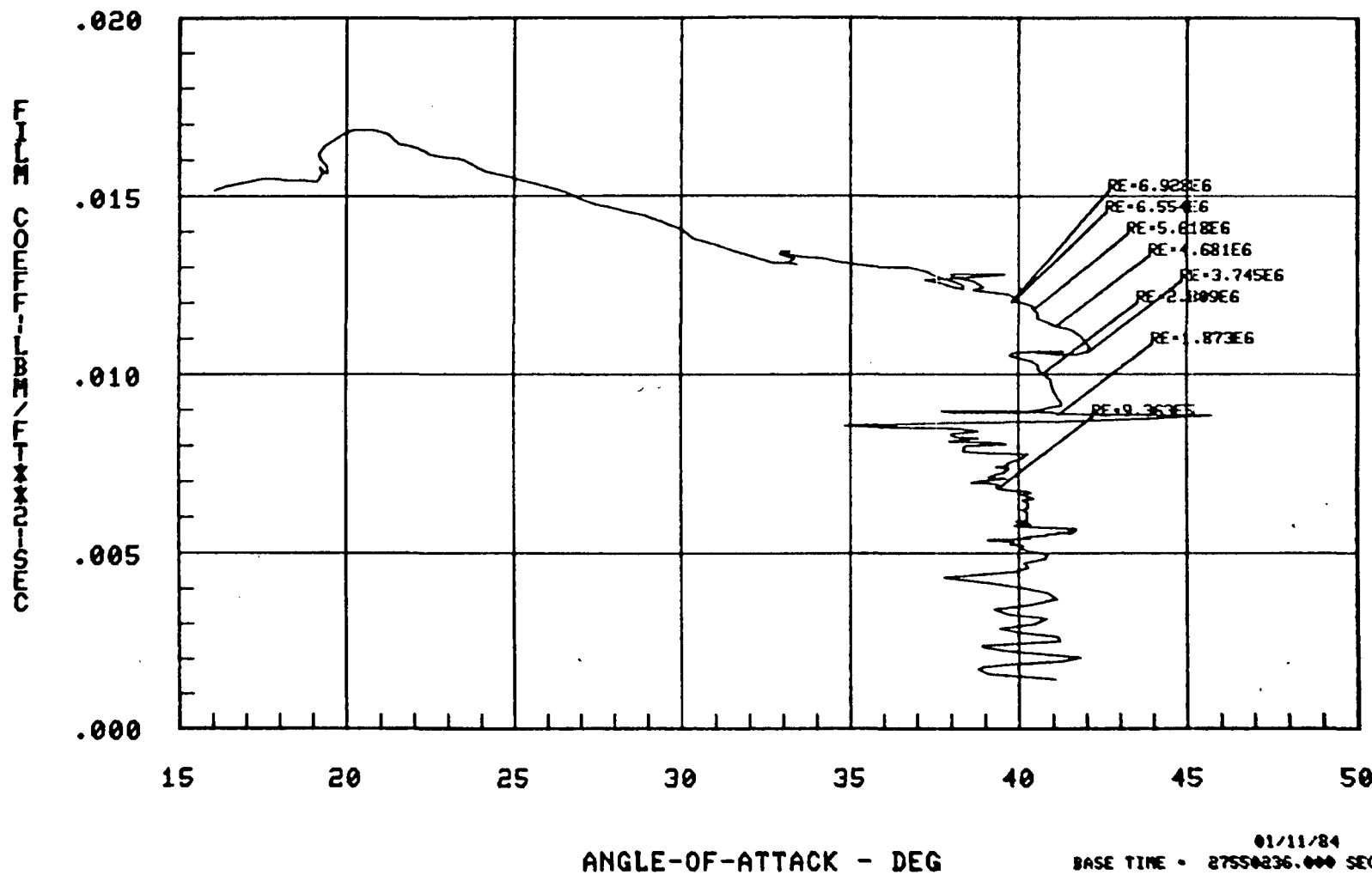
ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

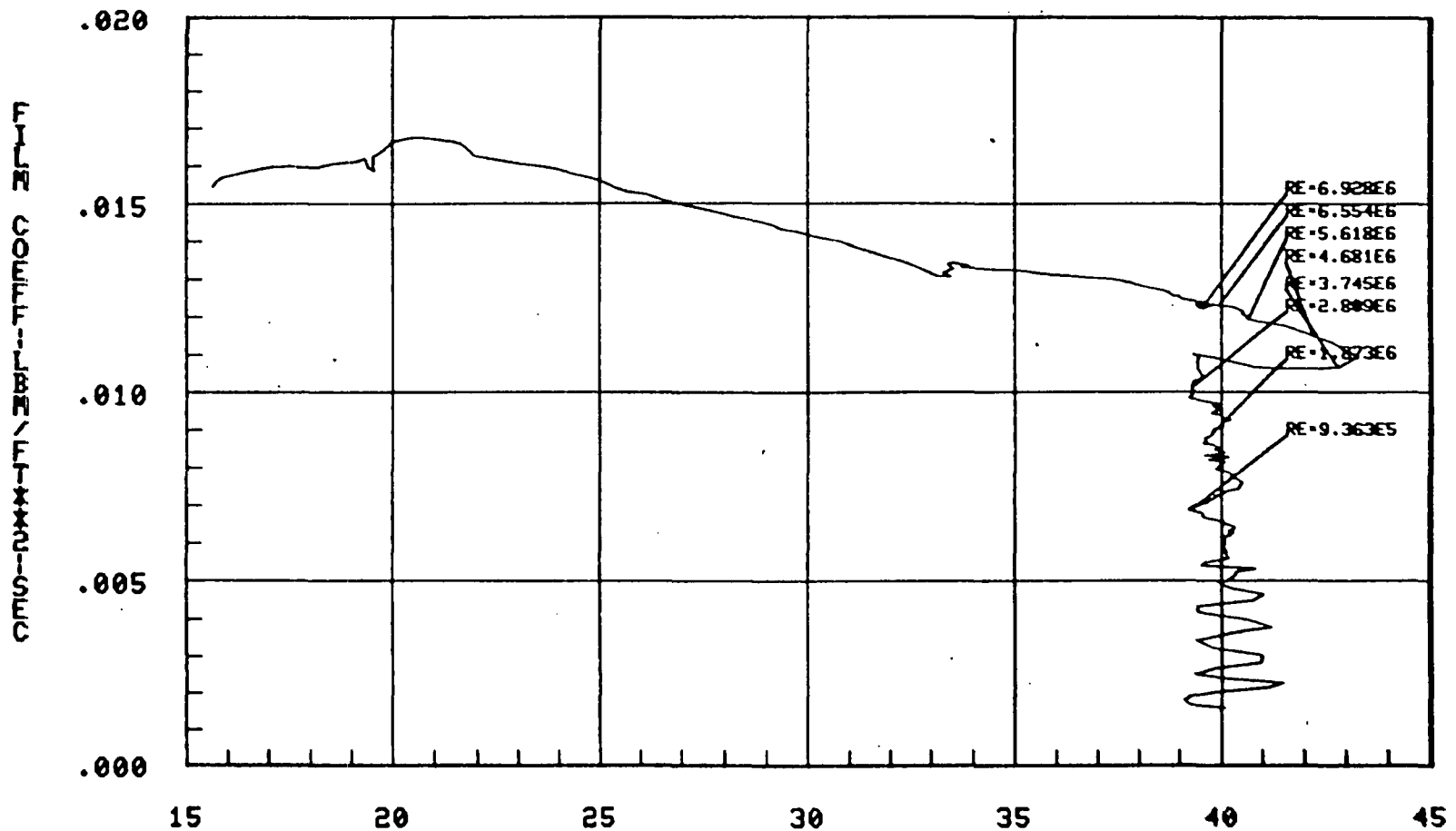
200-1530 SEC



# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

200-1440 SEC



A-53

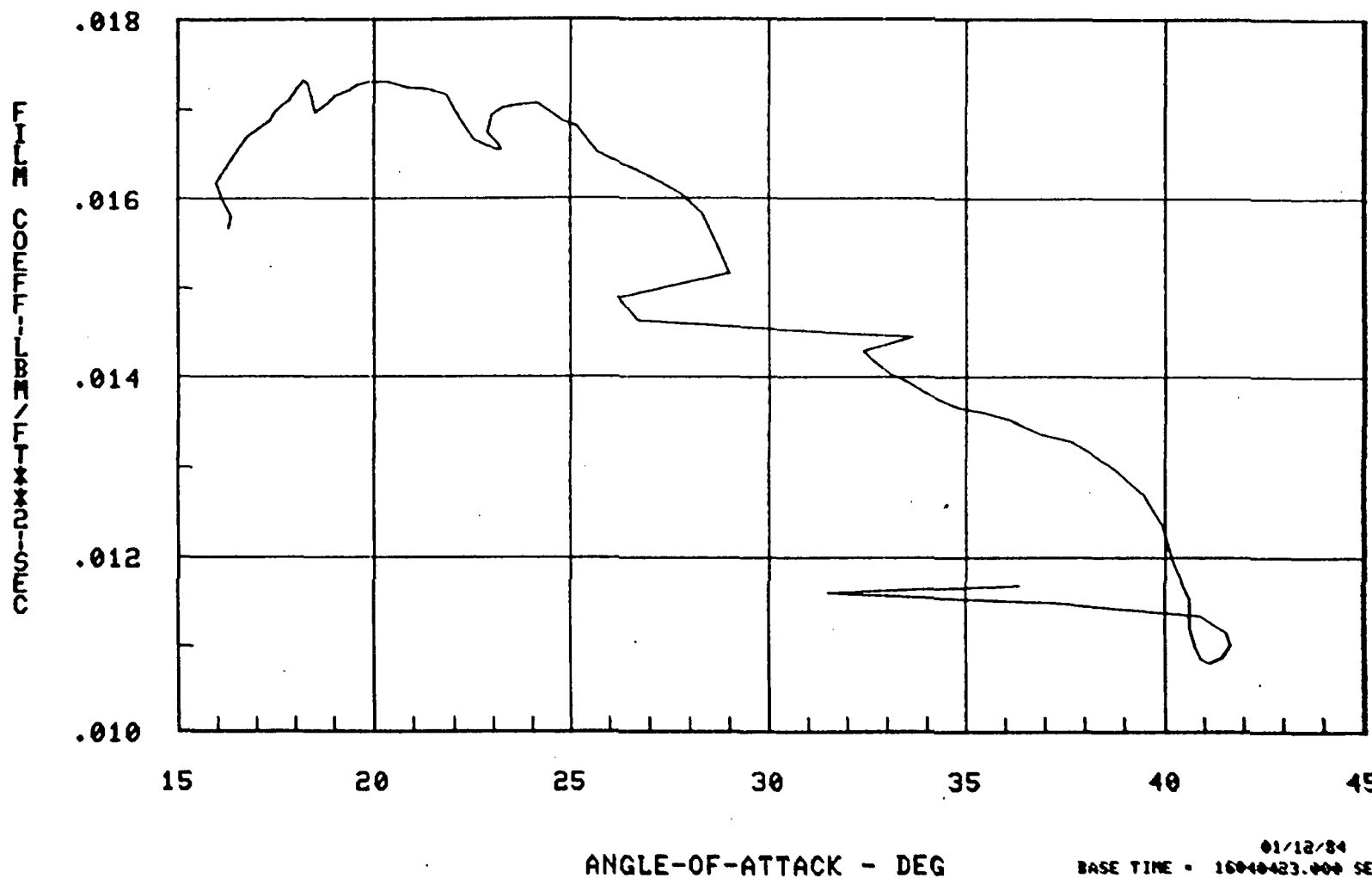
ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

965-1360 SEC

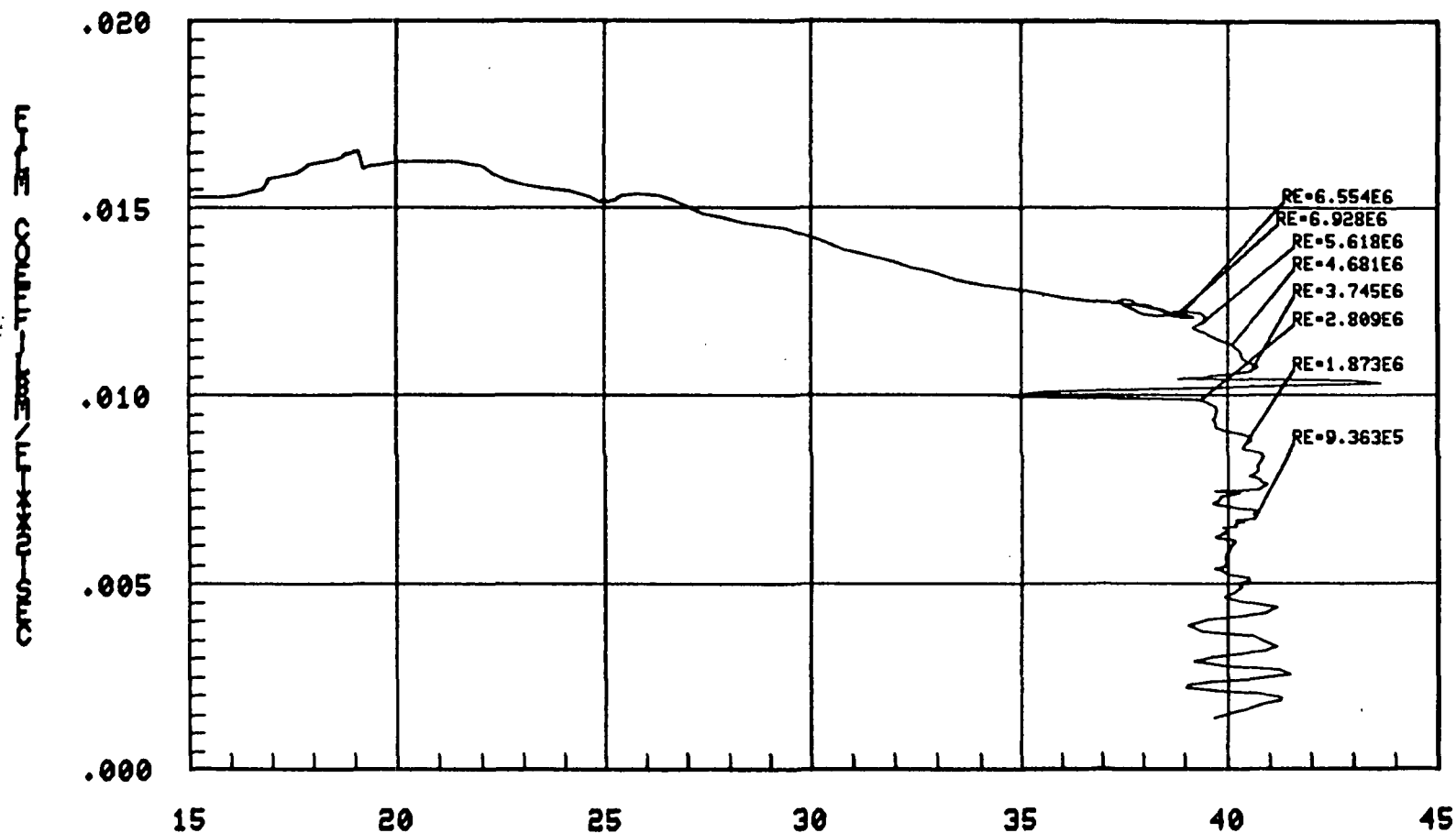




# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

150-1430 SEC

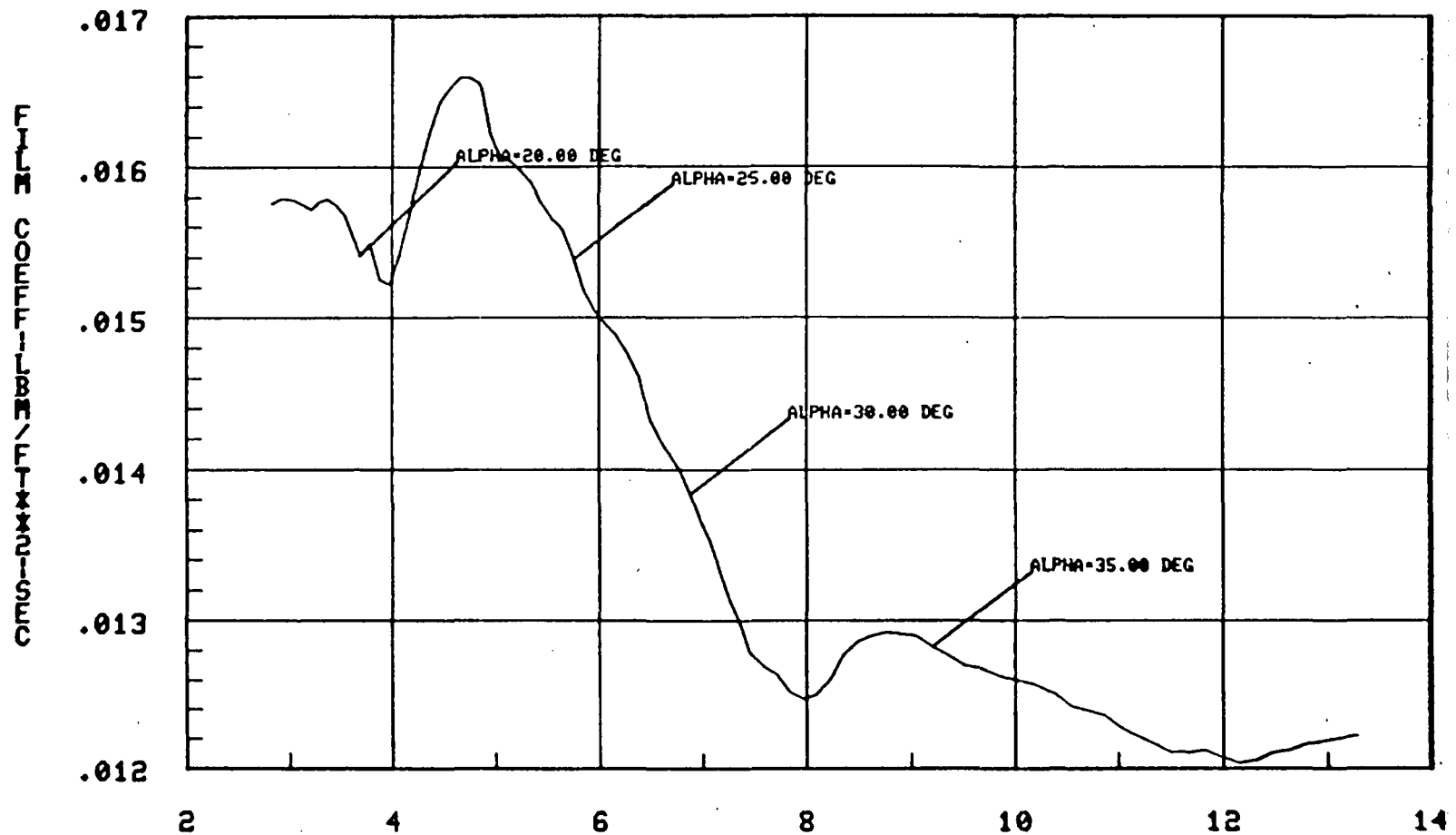


01/12/84  
BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

1065-1500 SEC



A-56

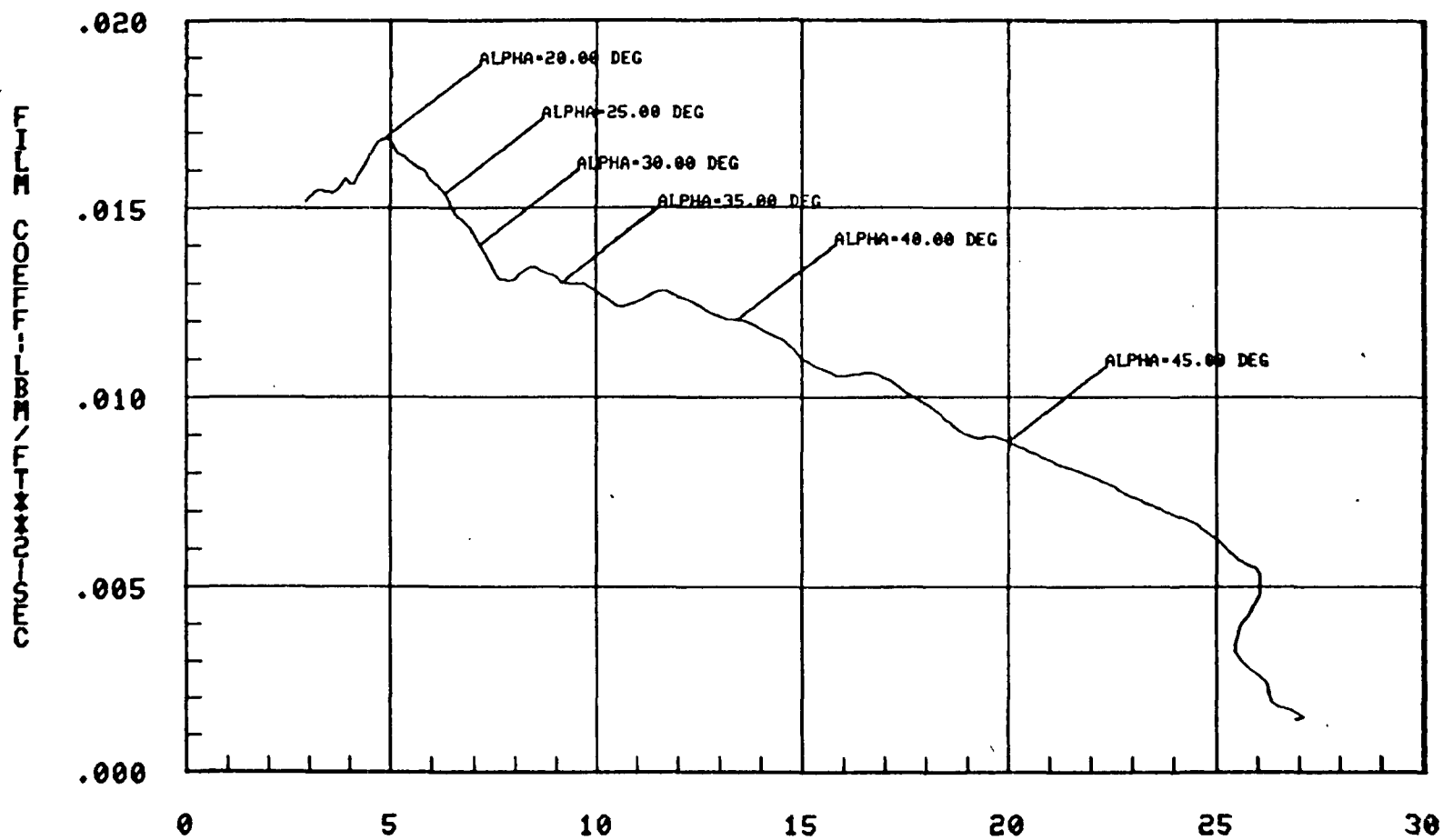
MACH NUMBER

01/11/84  
BASE TIME - 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

200-1530 SEC



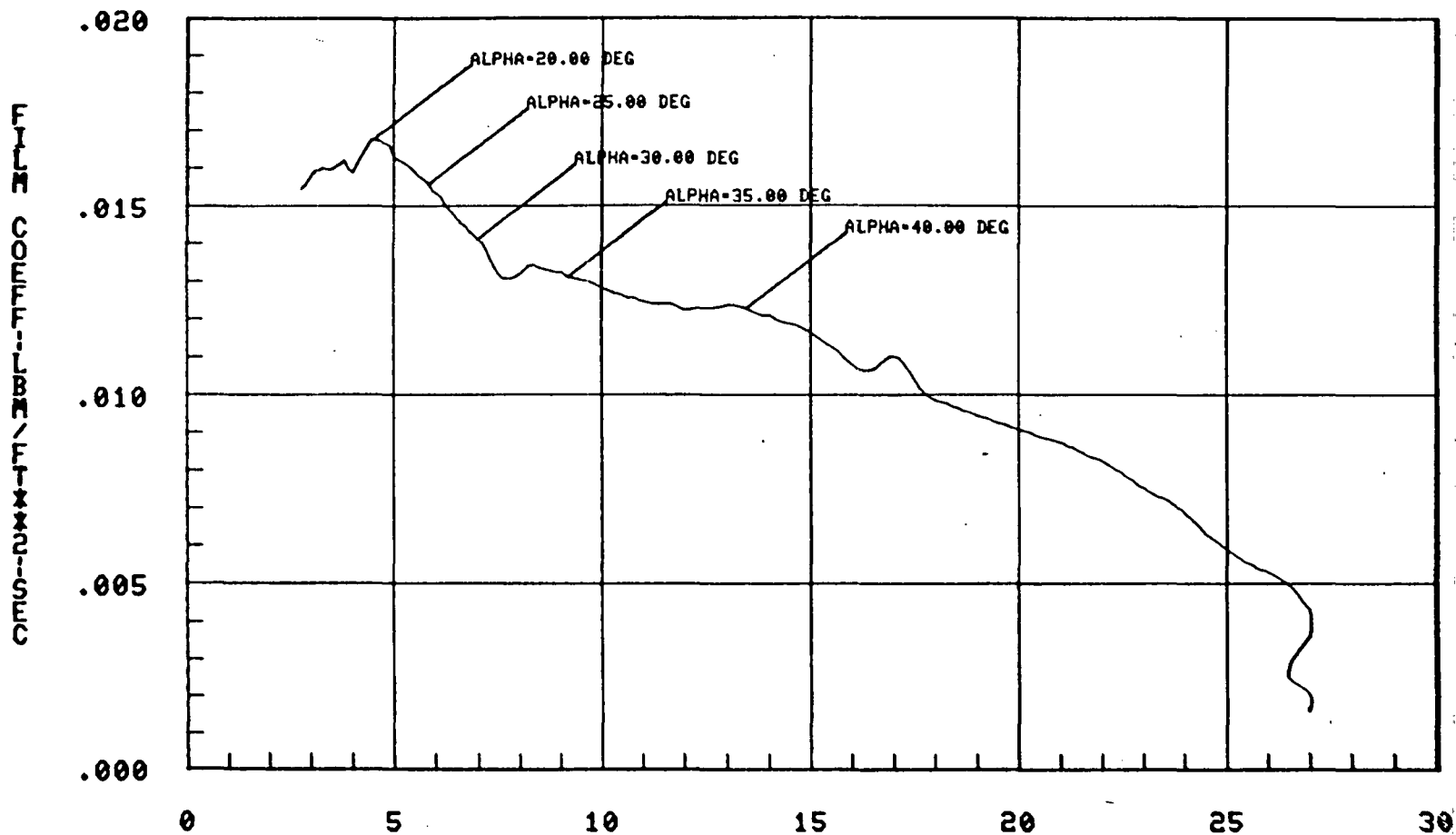
MACH NUMBER

01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

200-1440 SEC

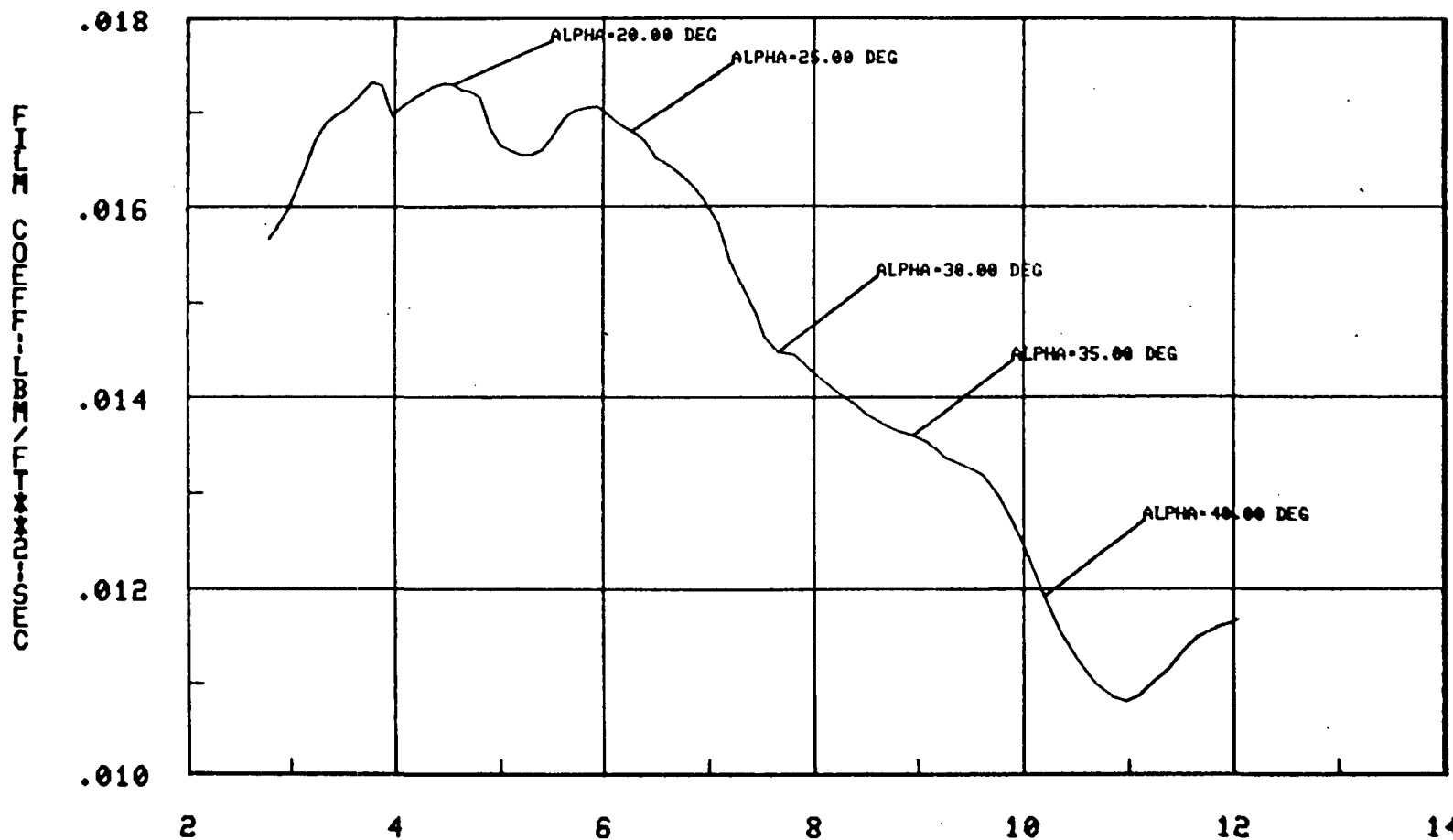


01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

965-1360 SEC



A-59

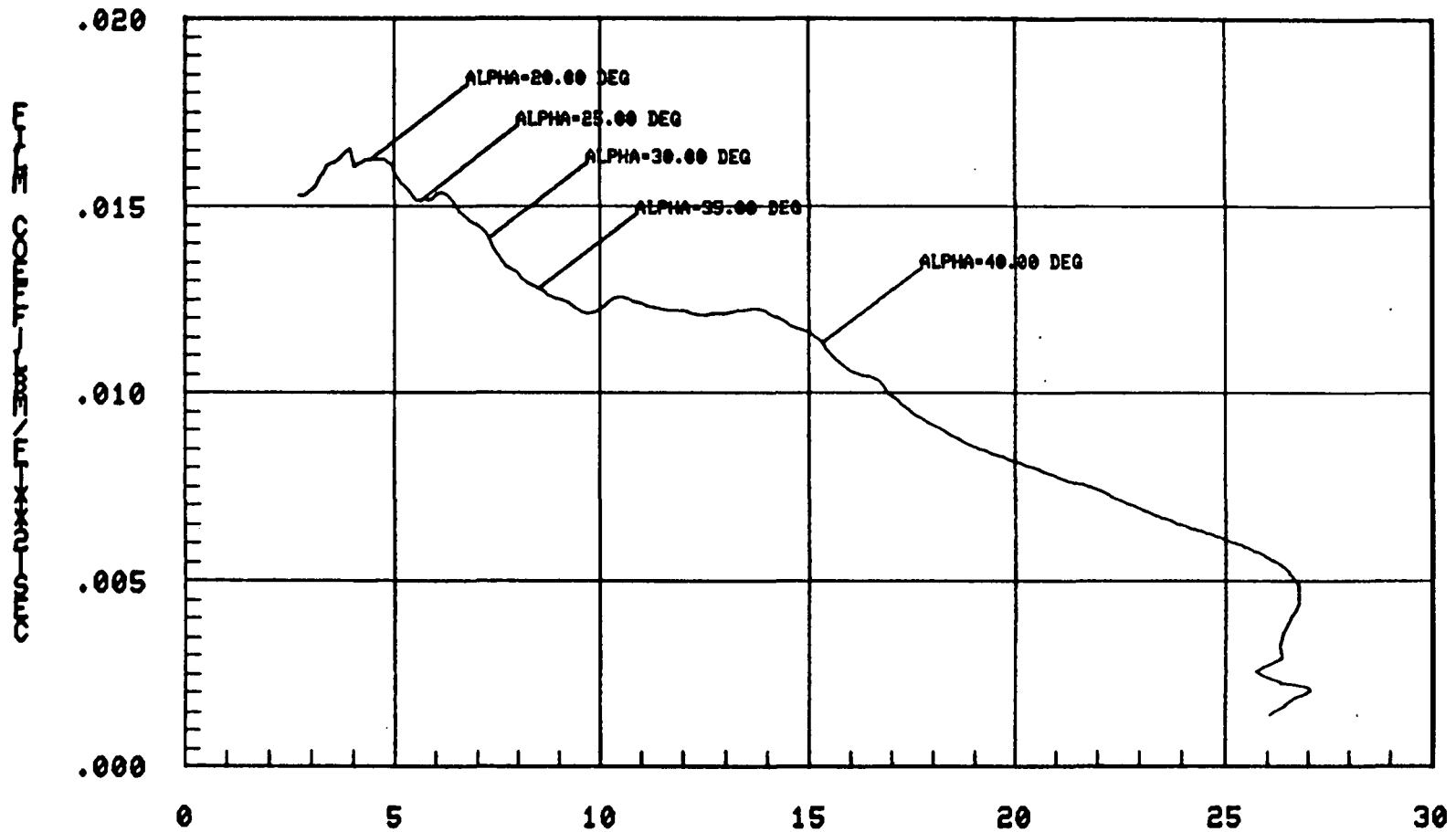
MACH NUMBER

01/18/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

150-1430 SEC



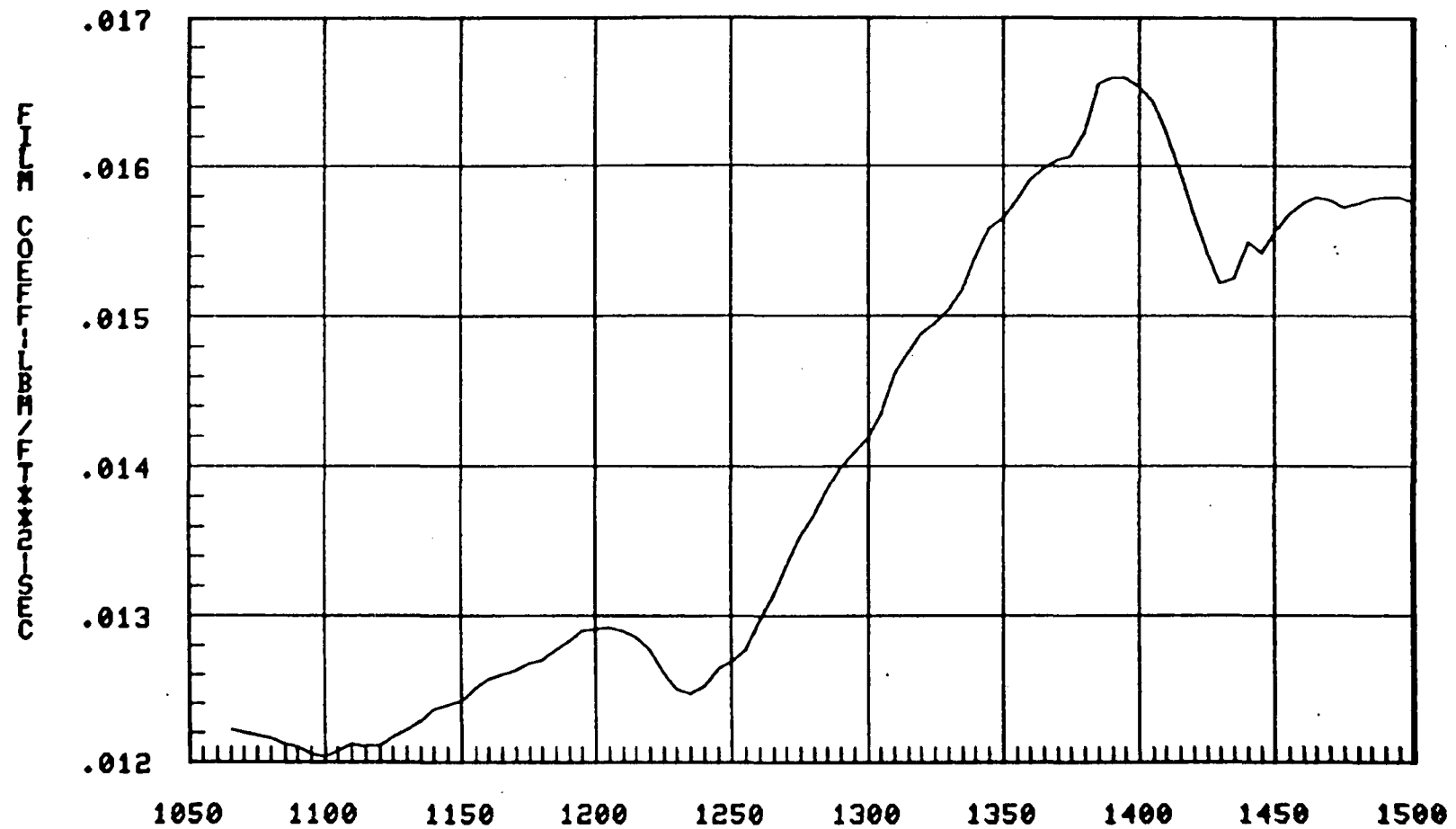
A-60

MACH NUMBER

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF



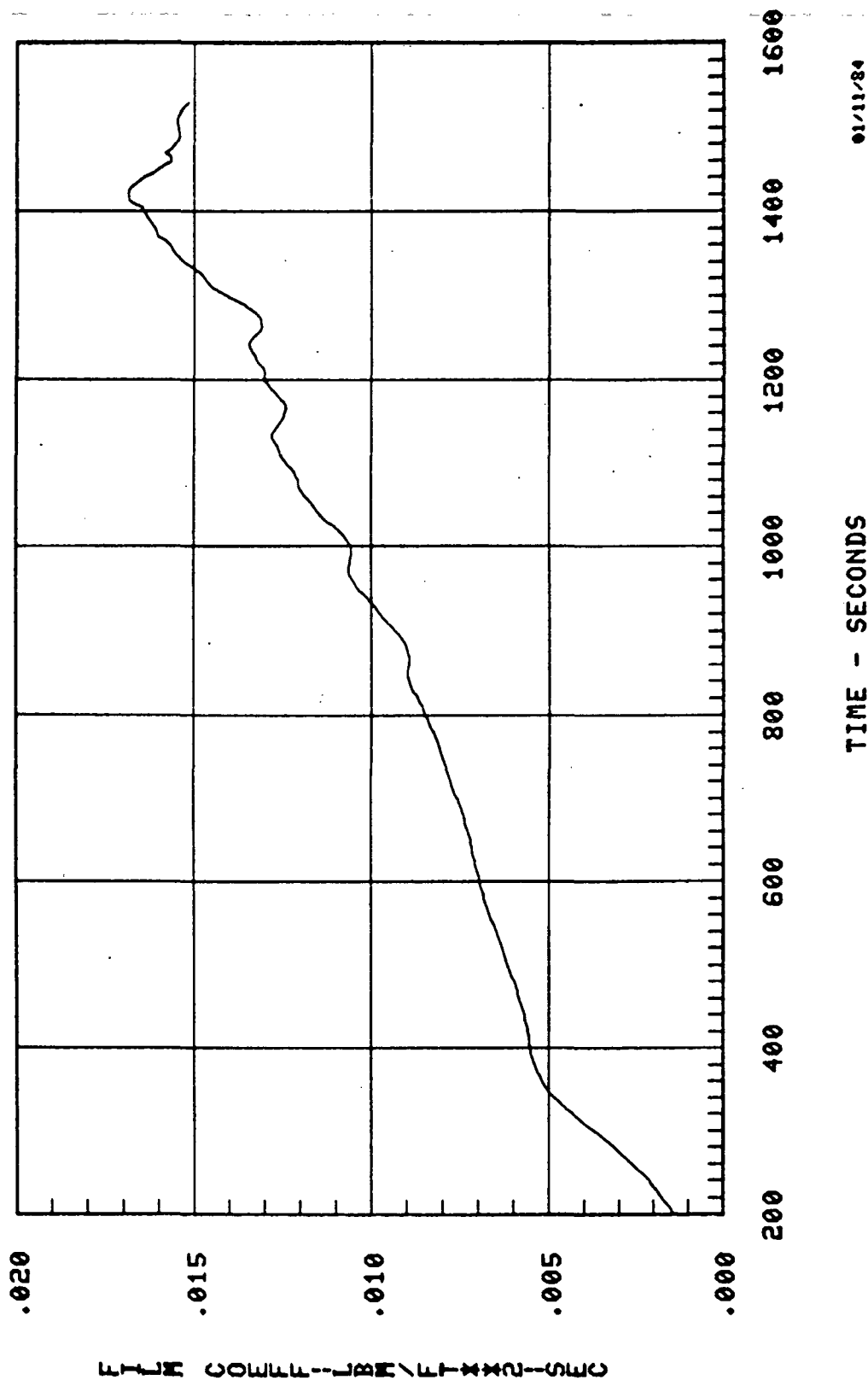
A-61

TIME - SECONDS

01/11/84

# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

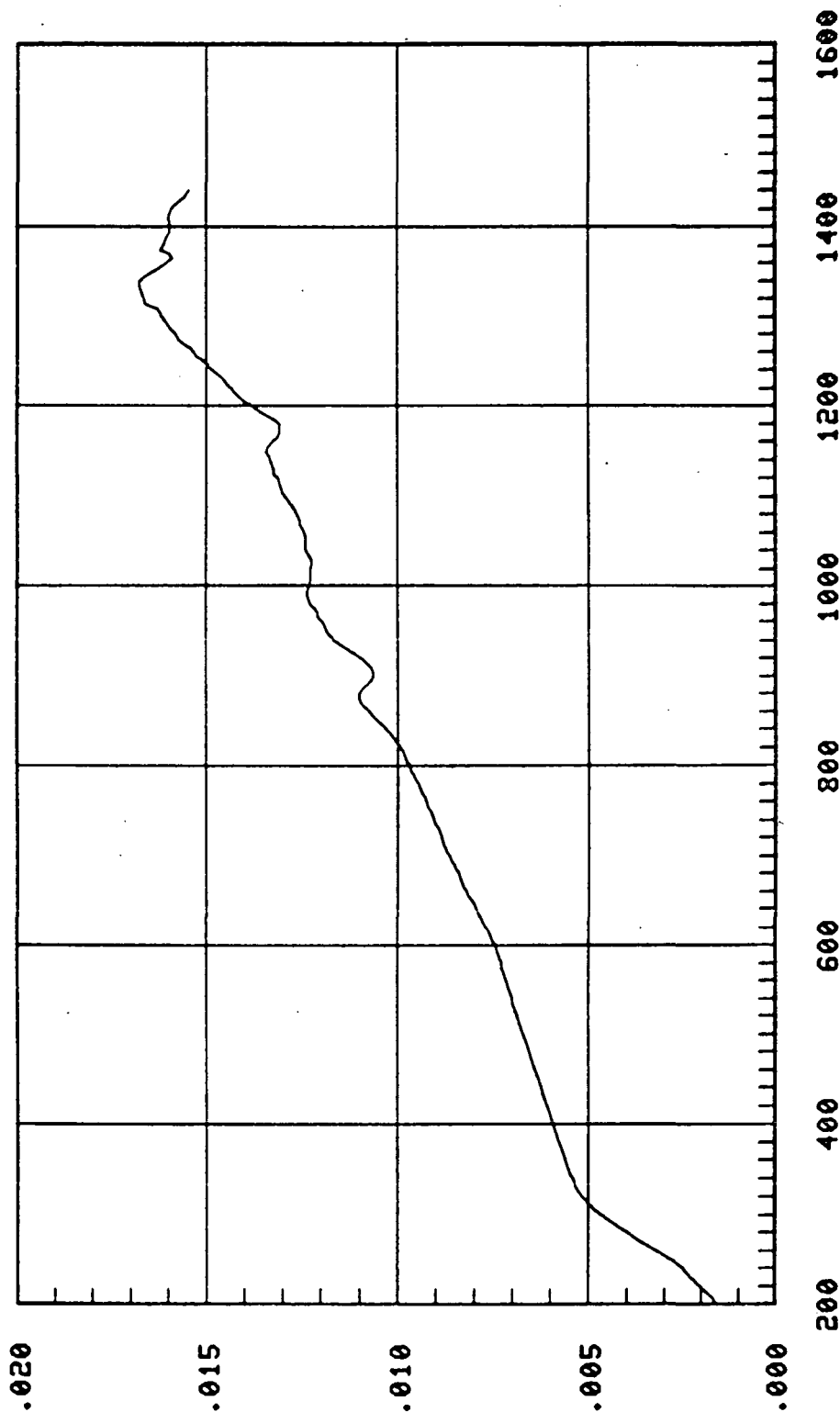
HREF





STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

\_\_\_\_\_ HREF

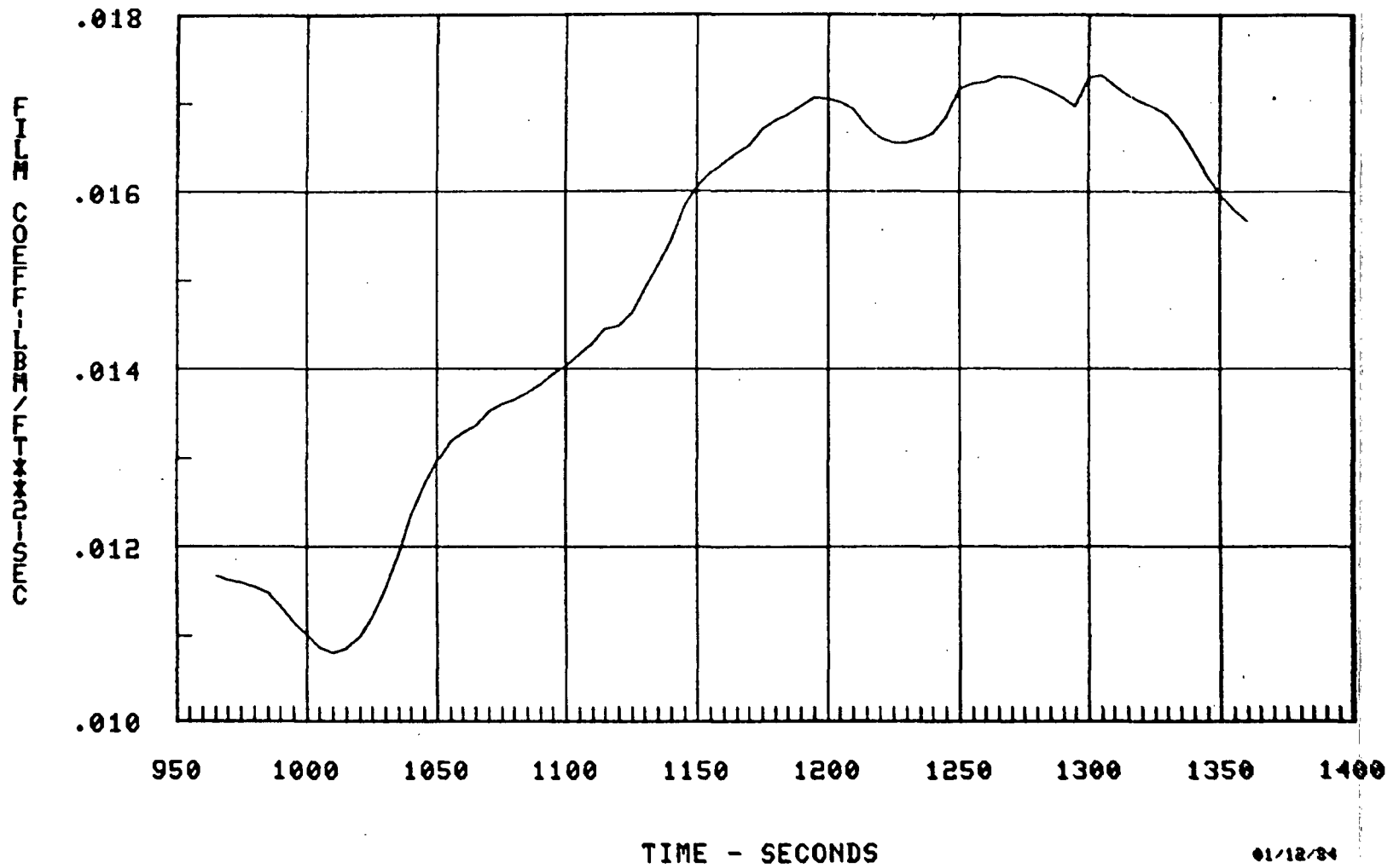


TIME - SECONDS

01/11/34

# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

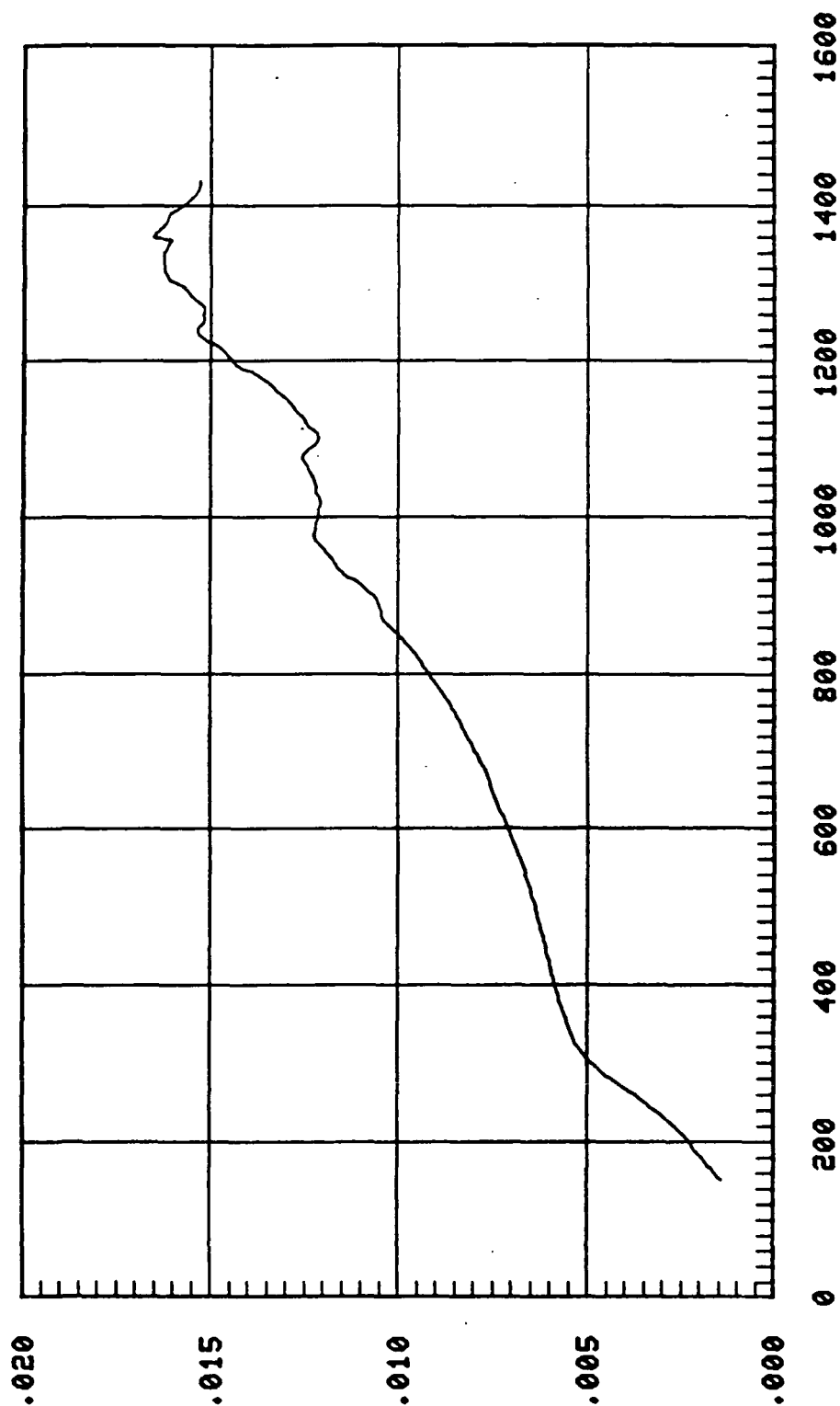


A-64

01/12/84

STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF



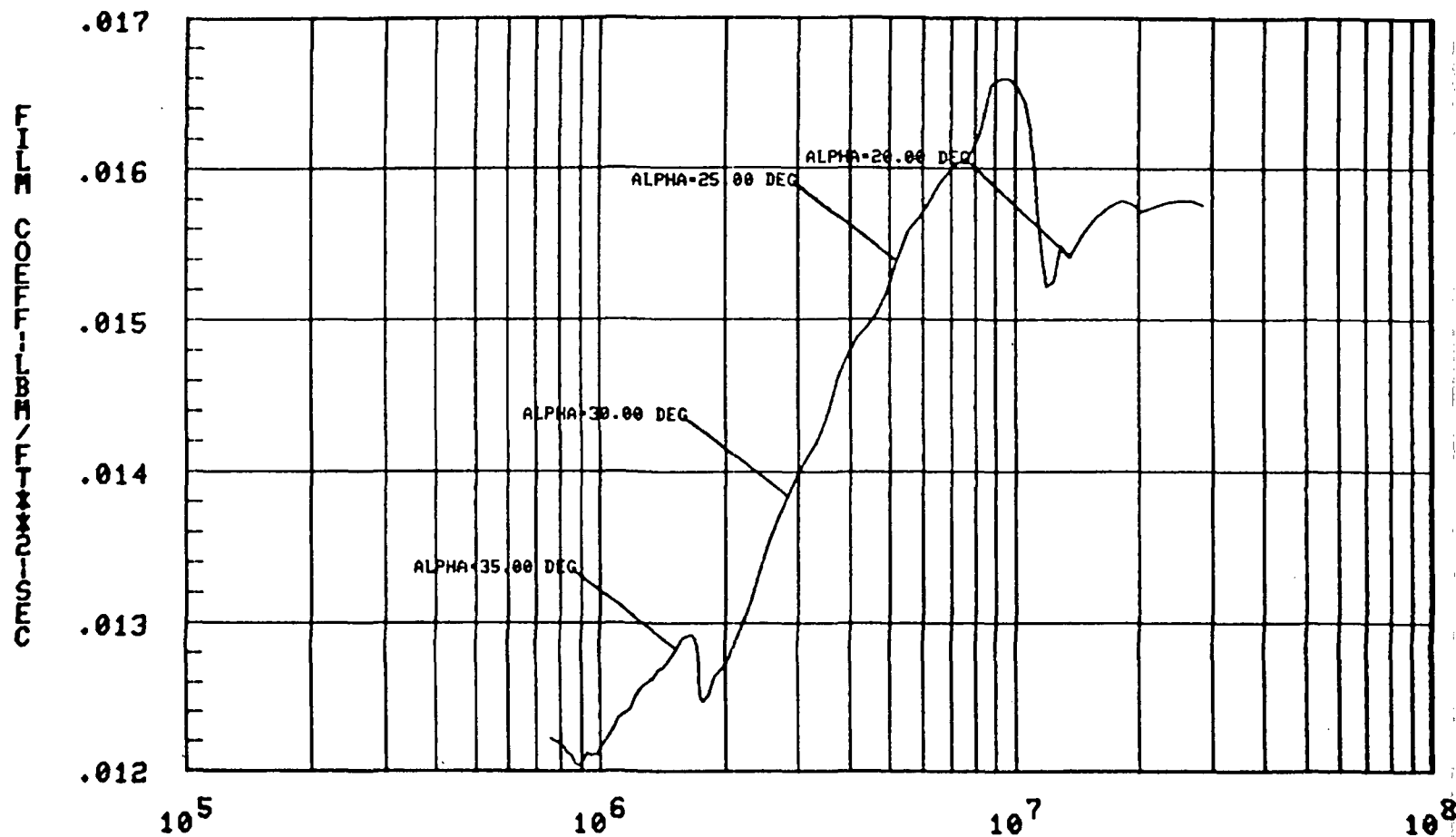
TIME - SECONDS

01/12/84

# STS-1 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

1065-1500 SEC



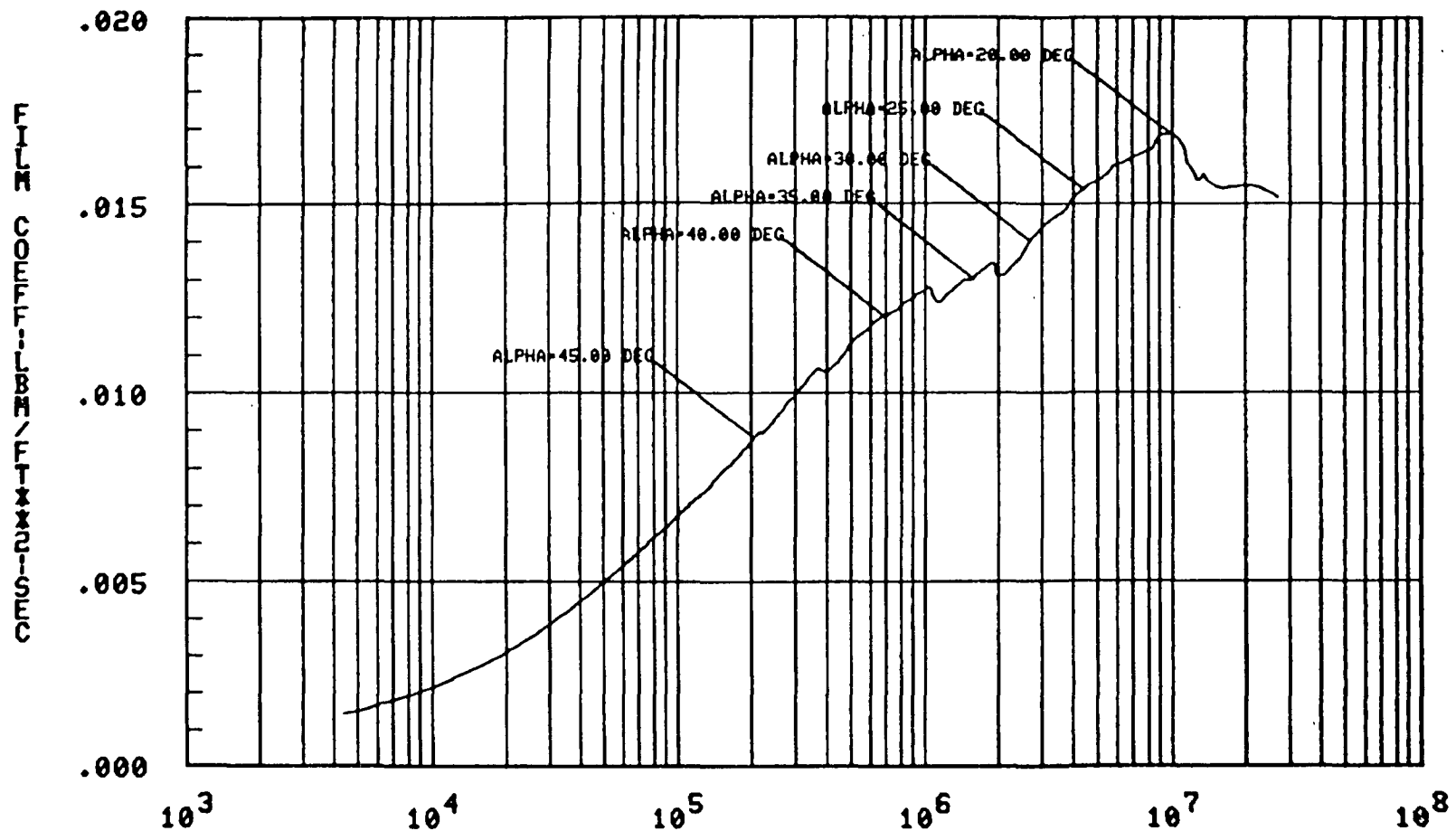
01/11/84

BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

200-1530 SEC



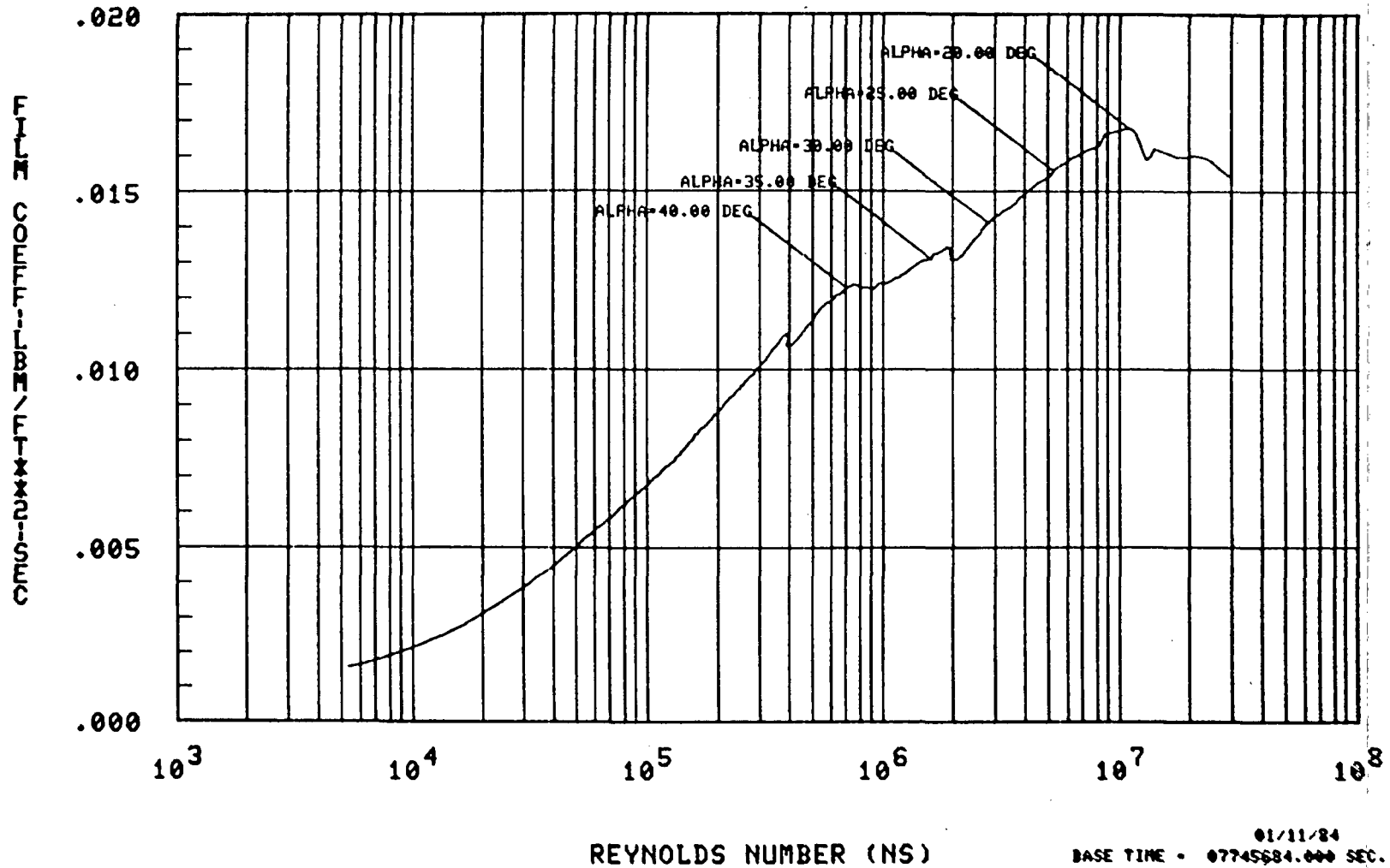
REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME • 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

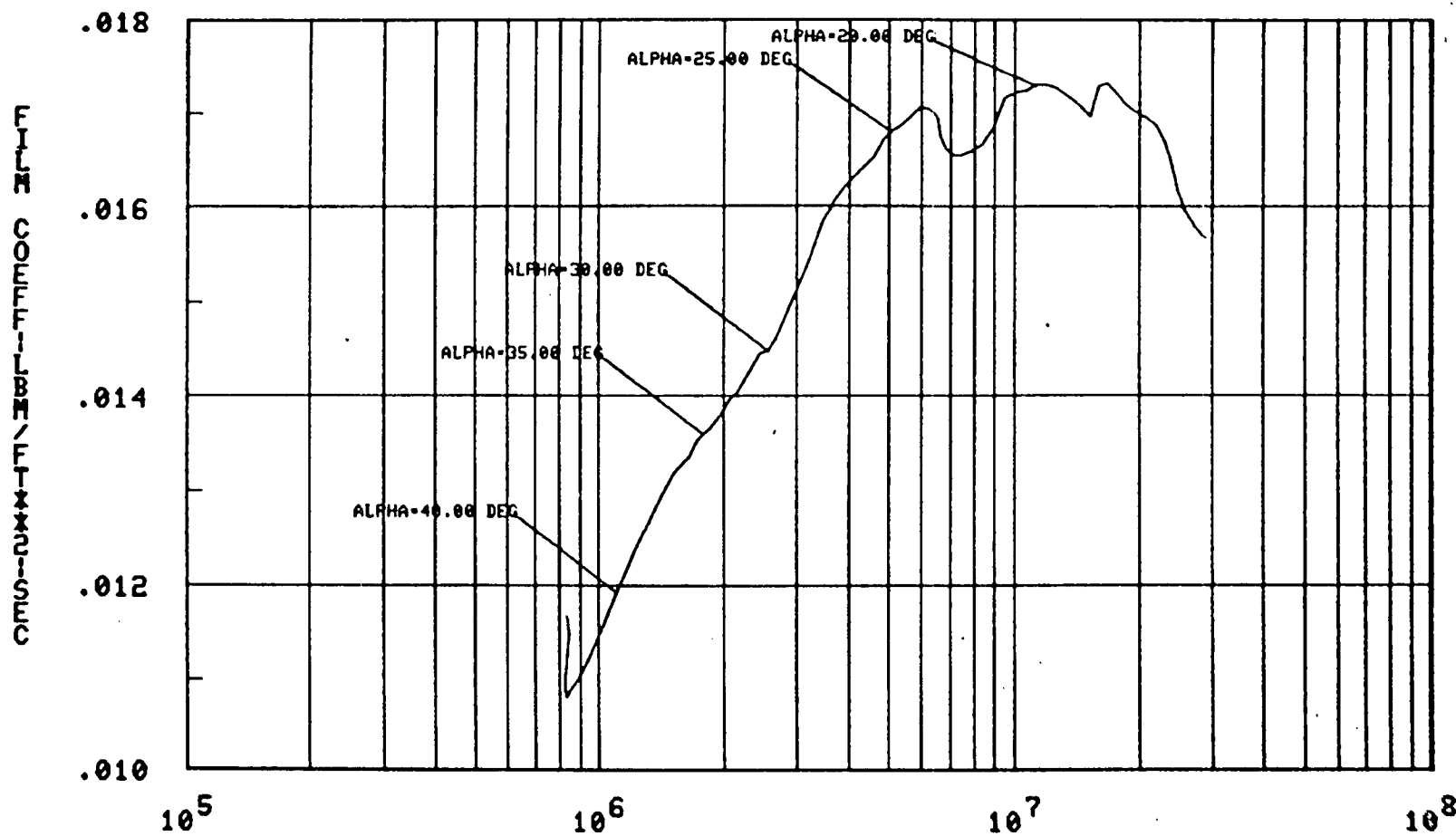
200-1440 SEC



# STS-4 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

HREF

965-1360 SEC



A-69

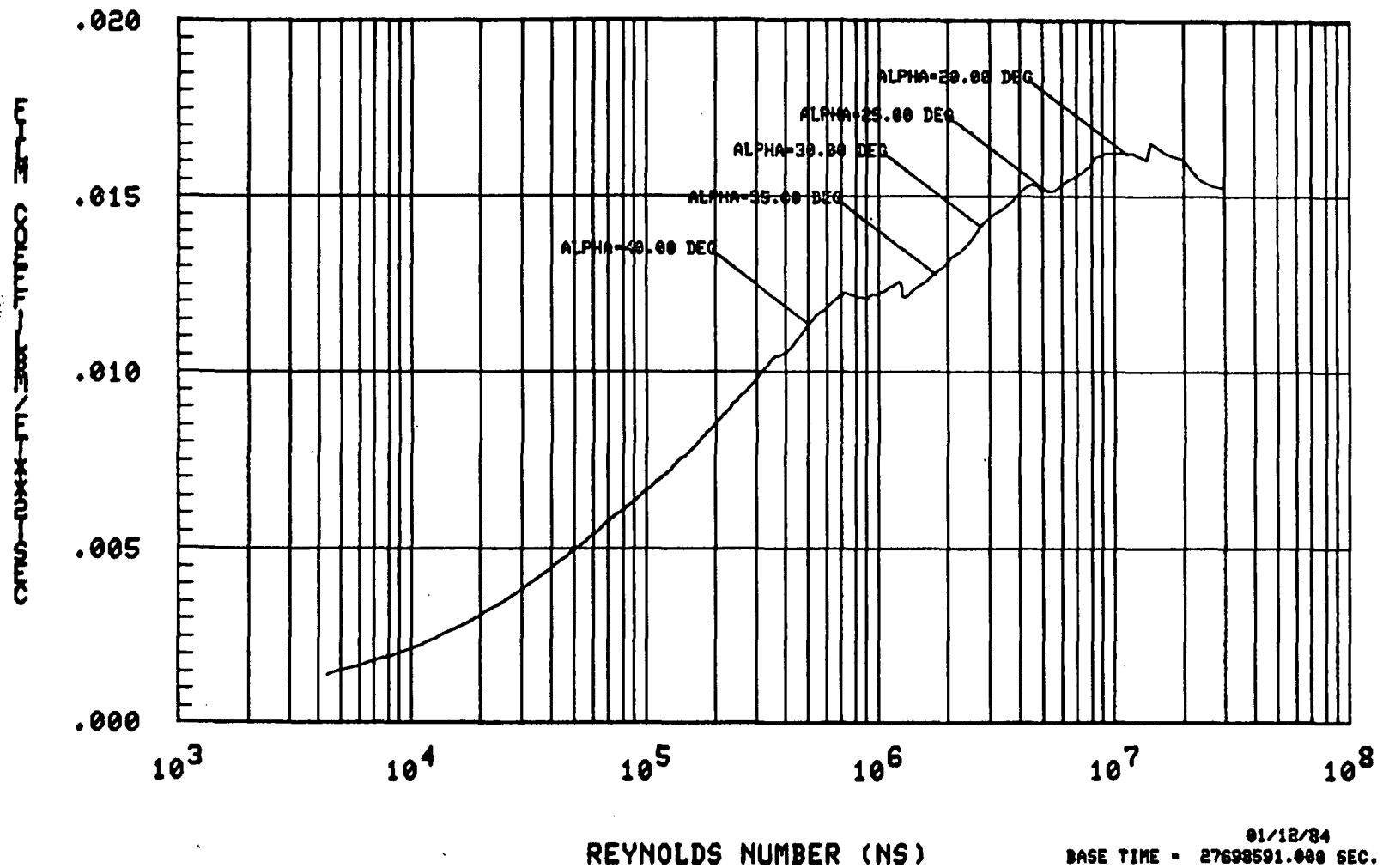
REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE & PLB DOOR) Z=400 & Z=440

— HREF

150-1430 SEC





APPENDIX B

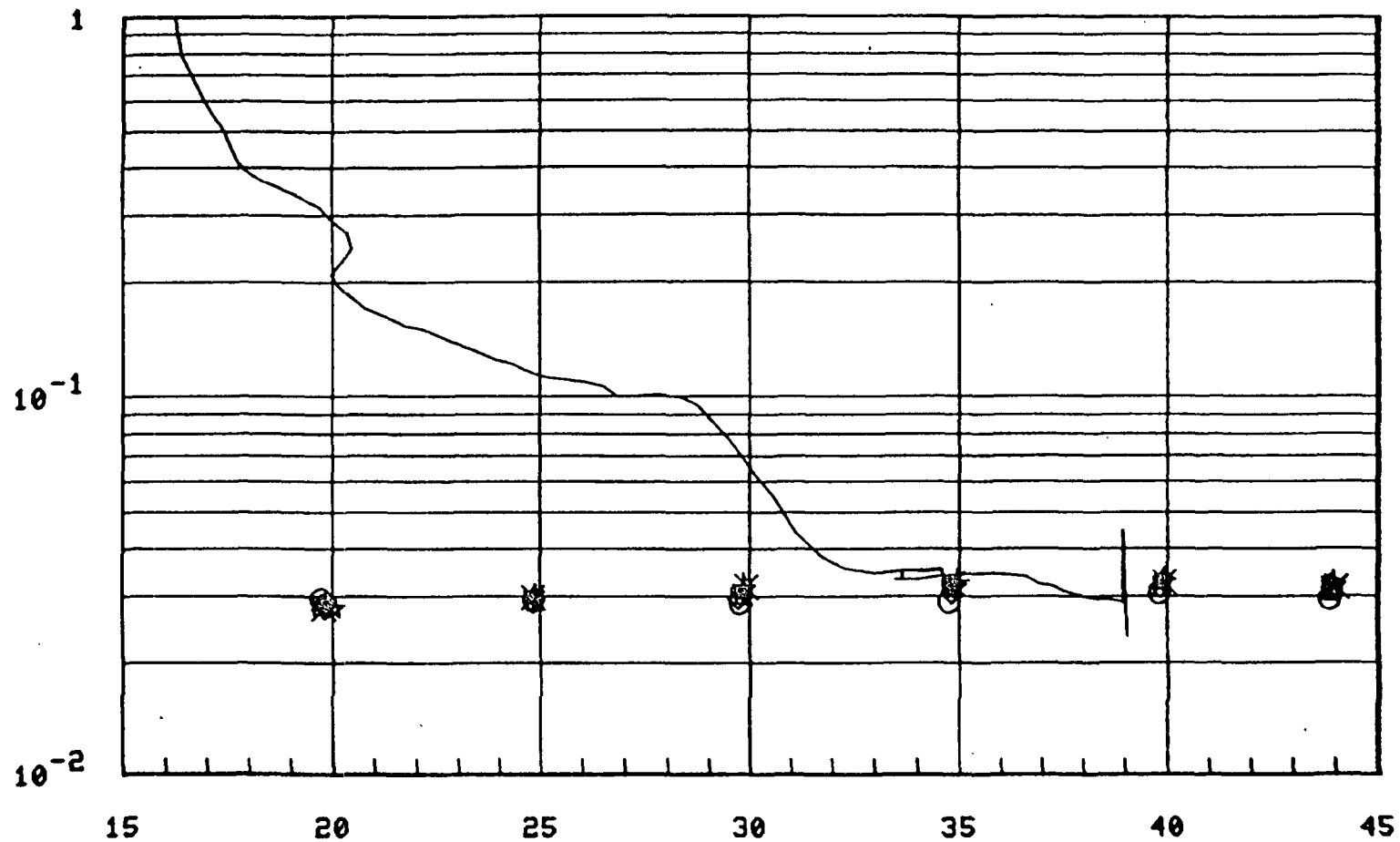
FLIGHT DATA

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9892A/H-REF 1065-1500 SEC

LINE CODE - H/H-0000



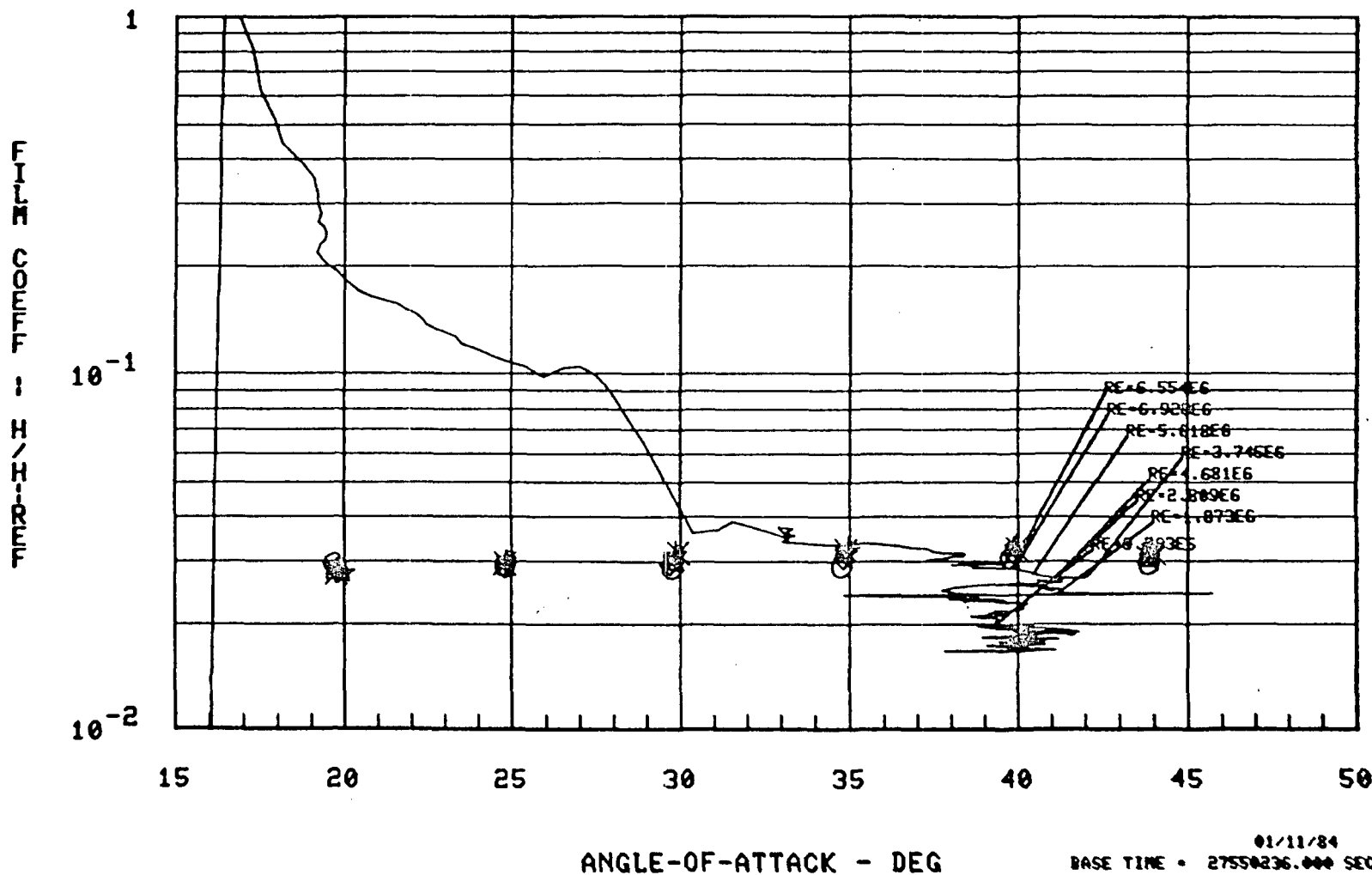
ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 09049744.000 SEC.

○□◇△▽☆✚✕

OH74	0.0175	SCALE	RE	=	0.5	E06
OH74	0.0175	SCALE	RE	=	1.0	E06
OH74	0.0175	SCALE	RE	=	1.5	E06
OH74	0.0175	SCALE	RE	=	2.0	E06
OH74	0.0175	SCALE	RE	=	2.5	E06
OH74	0.0175	SCALE	RE	=	3.0	E06
OH74	0.0175	SCALE	RE	=	3.5	E06
OH74	0.0175	SCALE	RE	=	3.7	E06

B-2



01/11/84  
BASE TIME • 27550236.000 SEC.

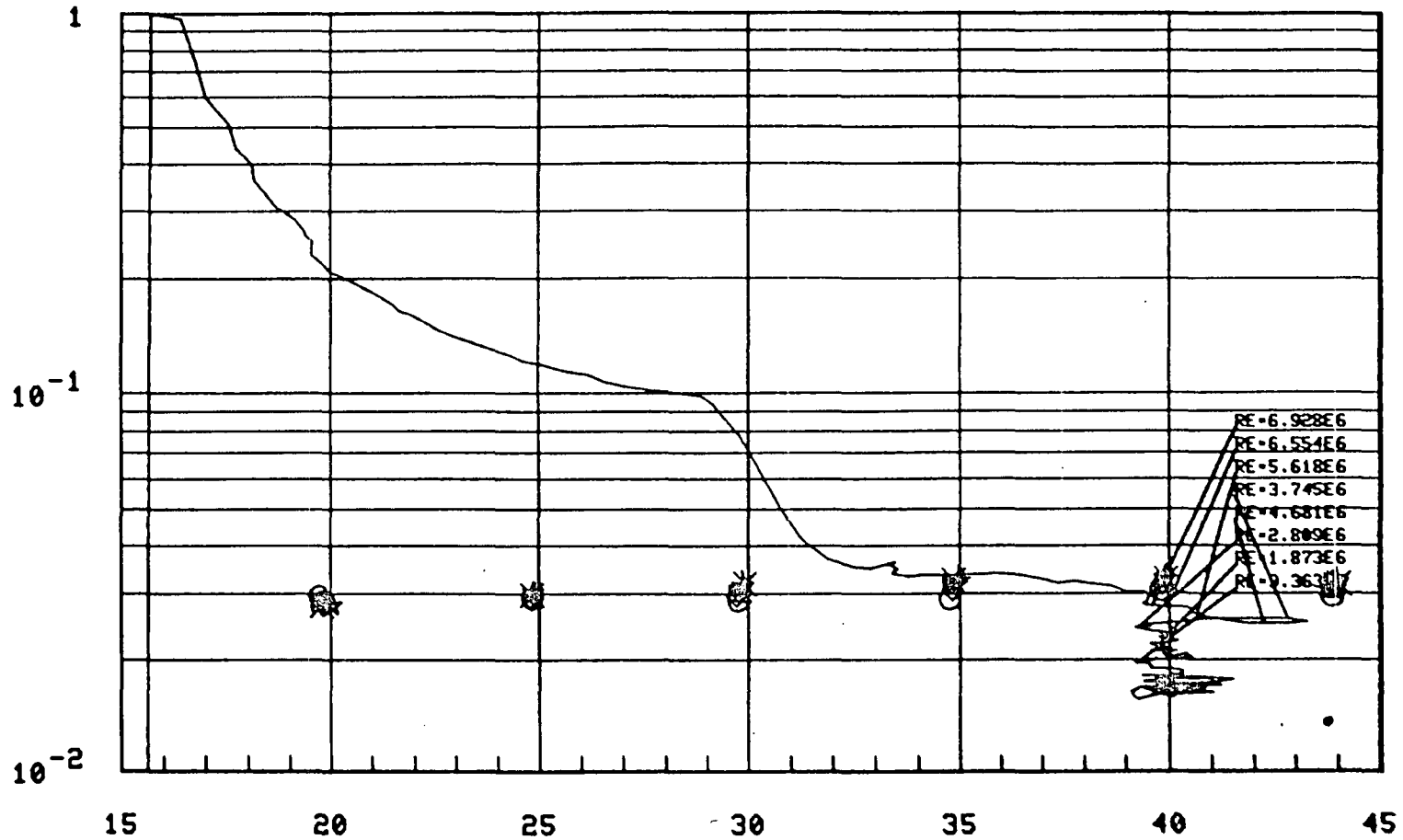
# STS-3 (107 FT LENGTH SIDE FUS X/L=0.20) Z=400

□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9892A/H-REF 200-1440 SEC

FILE COUNTE - H/H-REF



ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 07745684.000 SEC.

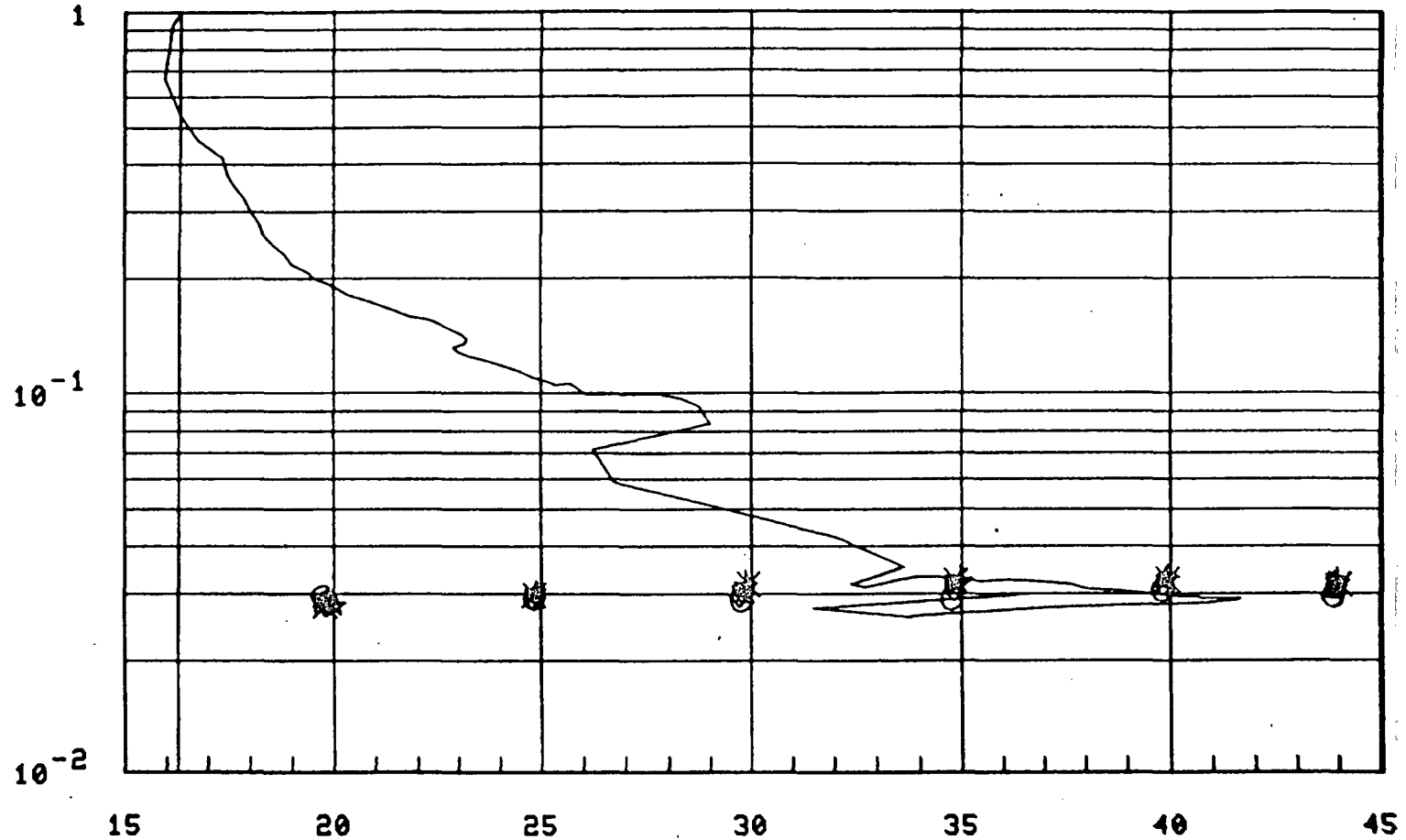
# STS-4 (107 FT LENGTH SIDE FUS X/L=0.20) Z=400

0  
O  
D  
O  
A  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9892A/H-REF 965-1360 SEC

LINE SCALE -- I/I--SCALE



ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 16040423.000 SEC.

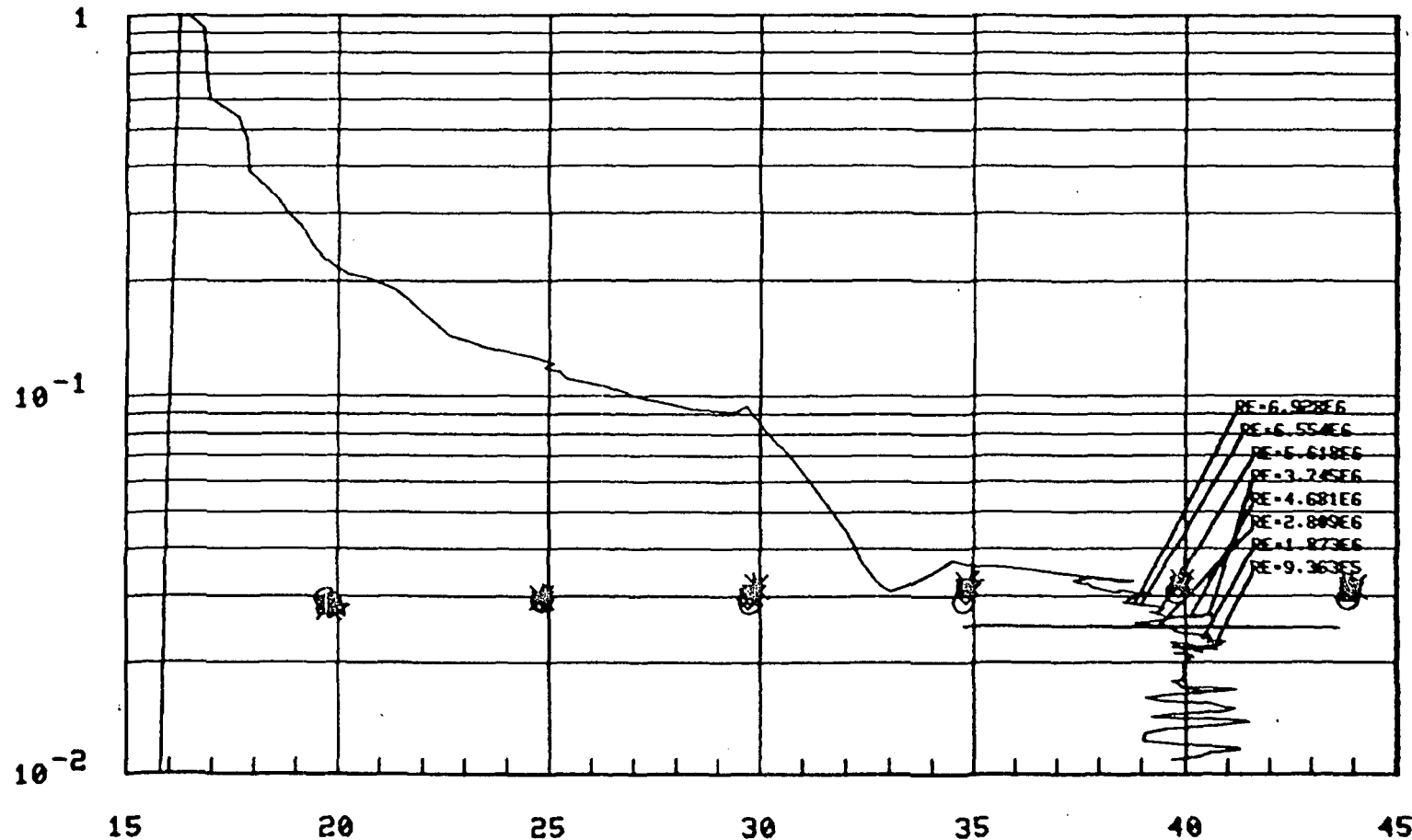
# STS-5 (107 FT LENGTH SIDE FUS X/L=0.20) Z=400

O  
 □  
 ◇  
 △  
 ★  
 +  
 X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9892A/H-REF 150-1430 SEC

LINE COUNT -- H/H-COUNT

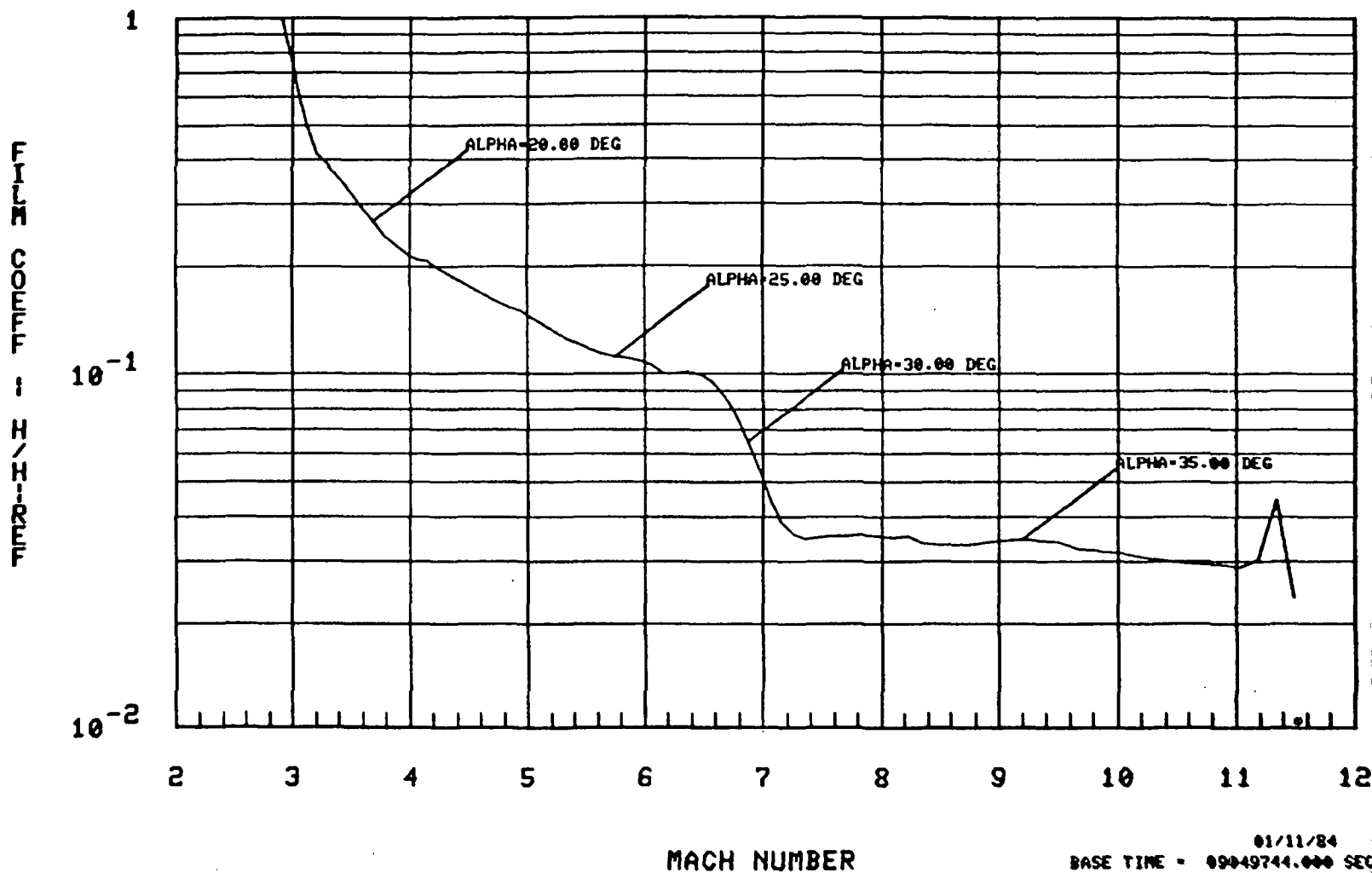


ANGLE-OF-ATTACK - DEG

01/12/84  
 BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

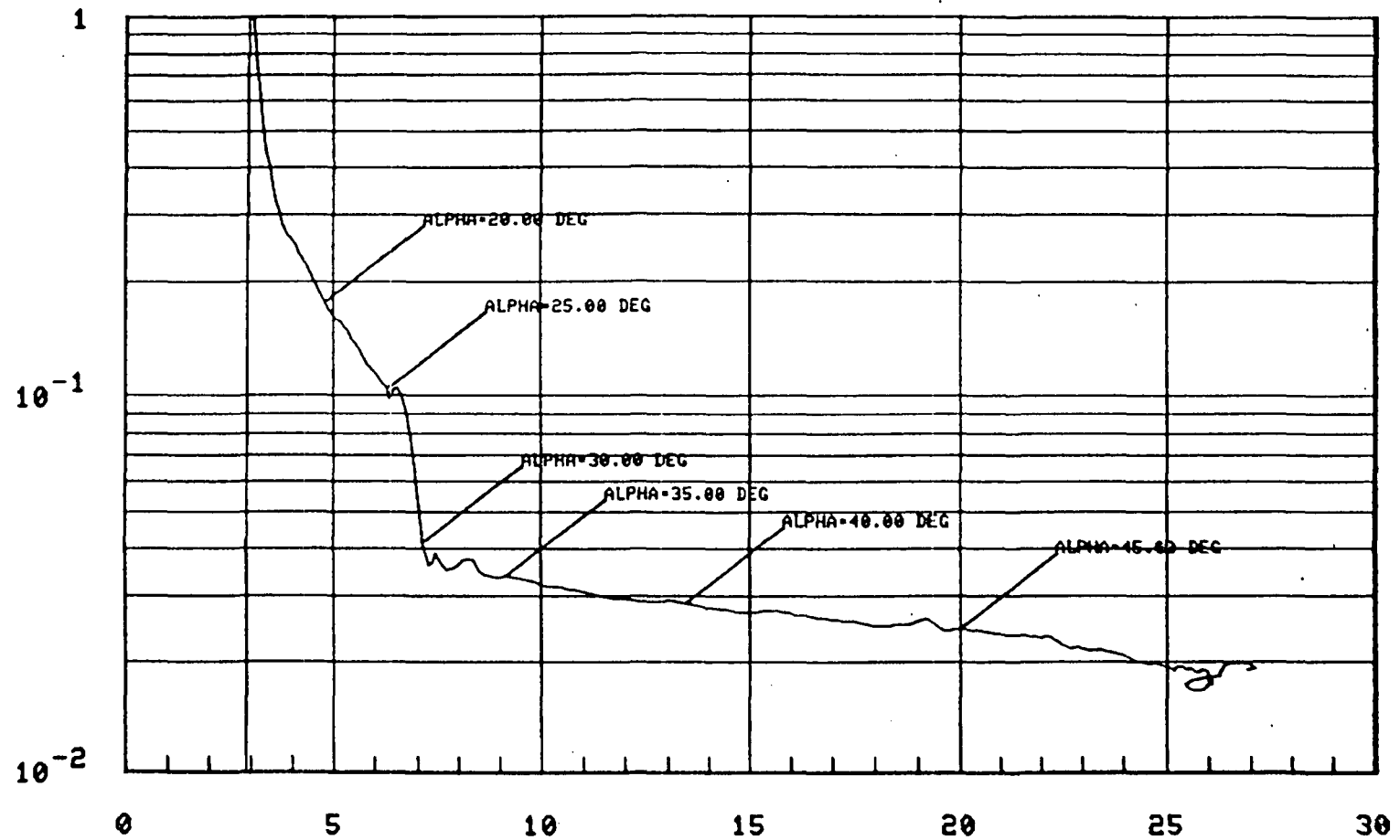
U0779892A/H-REF 1065-1500 SEC



# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

V07T9892A/H-REF 200-1530 SEC

B-7  
LINE COUNT - H/H-REF



MACH NUMBER

01/11/84  
BASE TIME = 27550236.000 SEC.

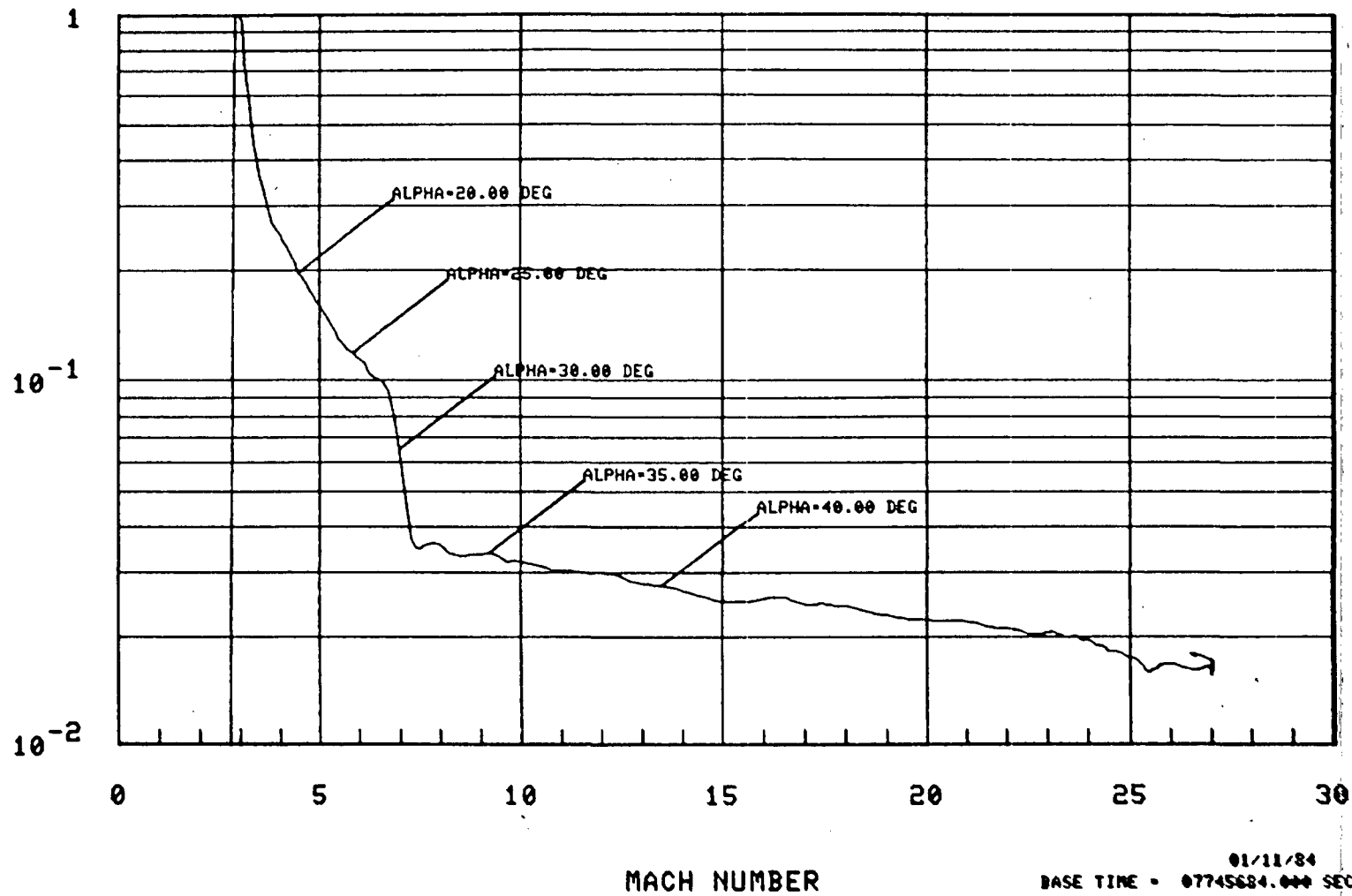


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

U07T9892A/H-REF 200-1440 SEC

WALL CORREL - H-H-RULE

B-8

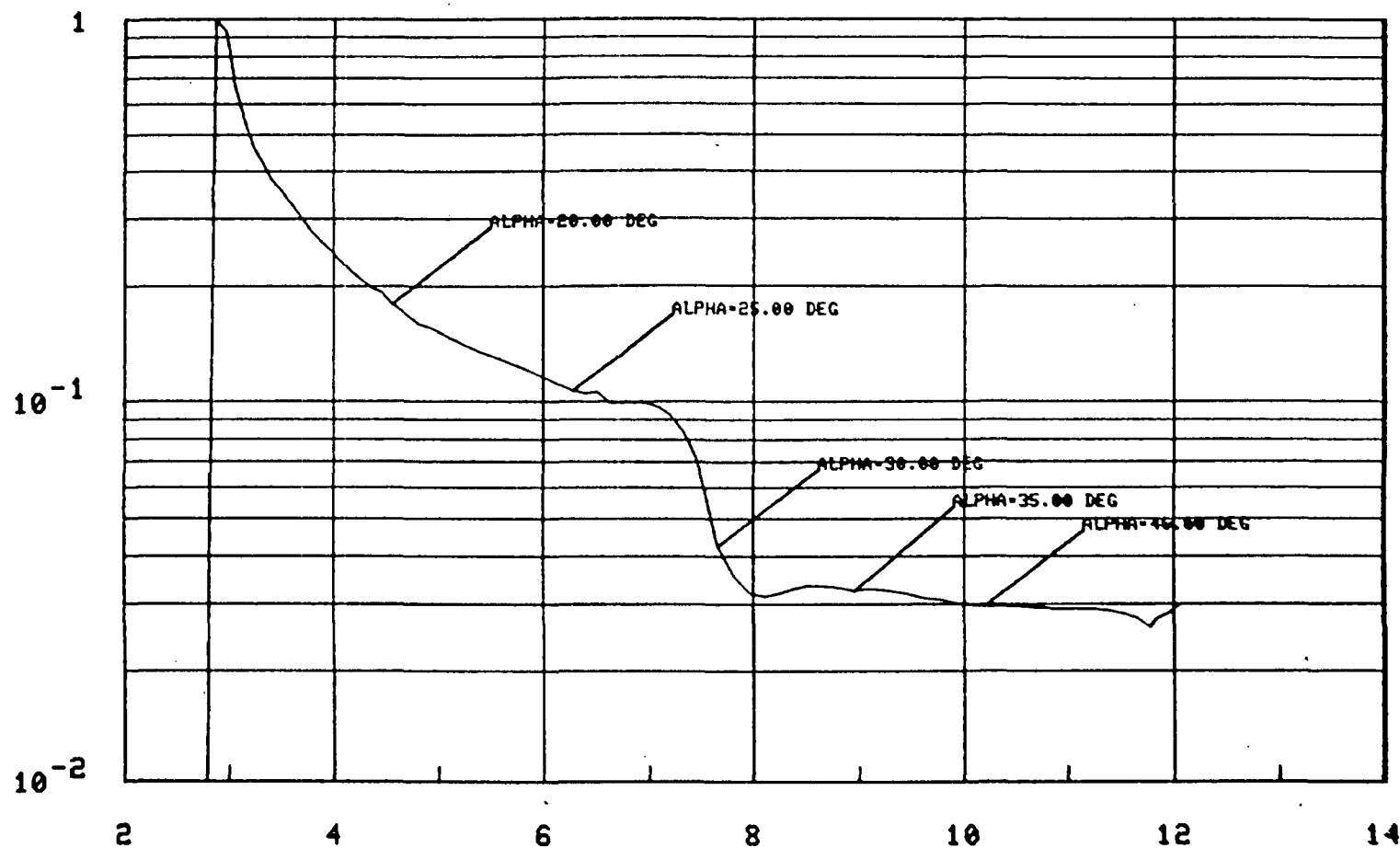


STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

U07T9892A/H-REF 965-1360 SEC

B-9

FILE COUNT - H/I-0000



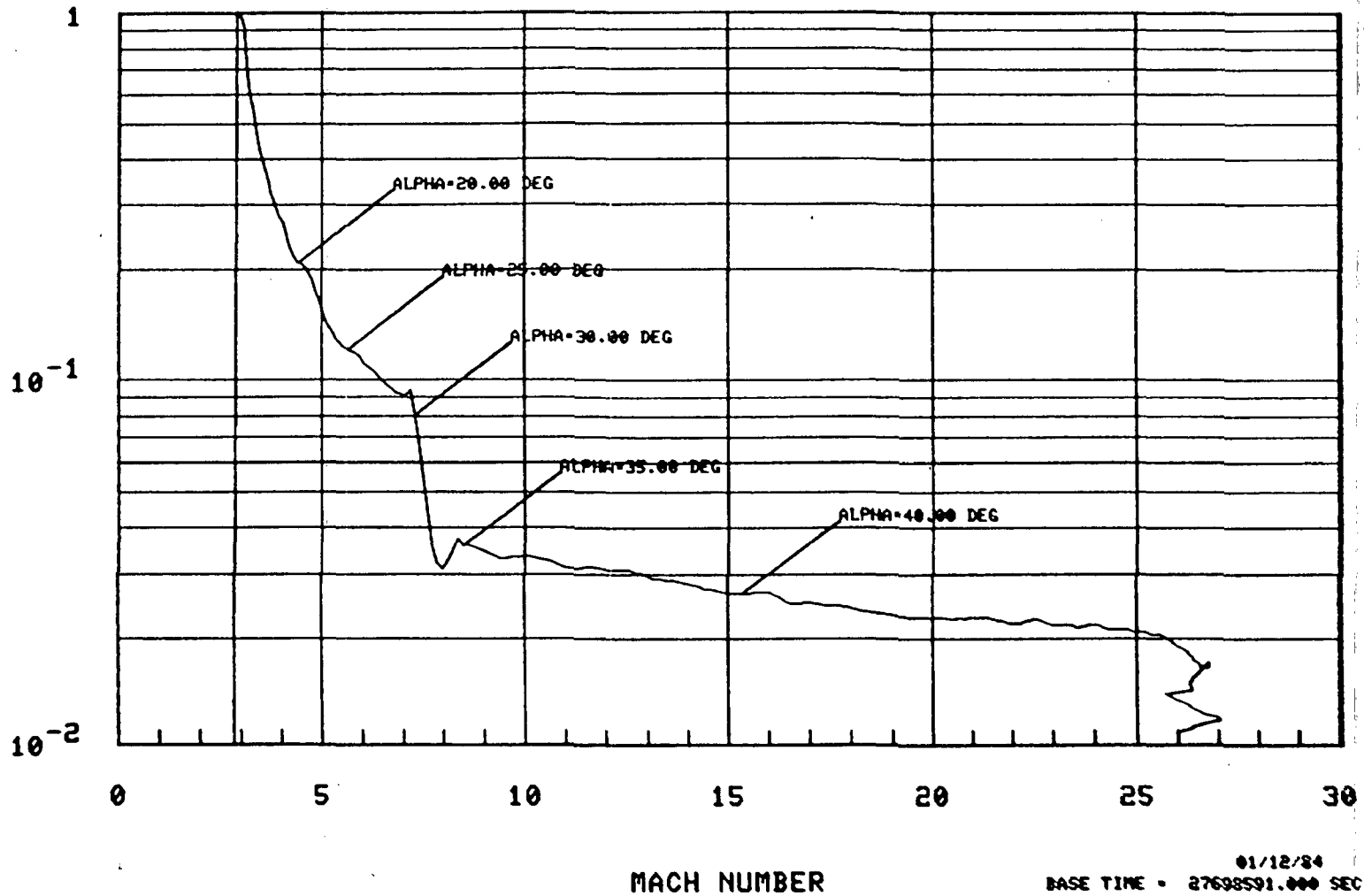
MACH NUMBER

01/12/84  
BASE TIME - 16040423.000 SEC.

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

U07T9892A/H-REF 150-1430 SEC

B-10  
LINE COUNT - H-H-REF



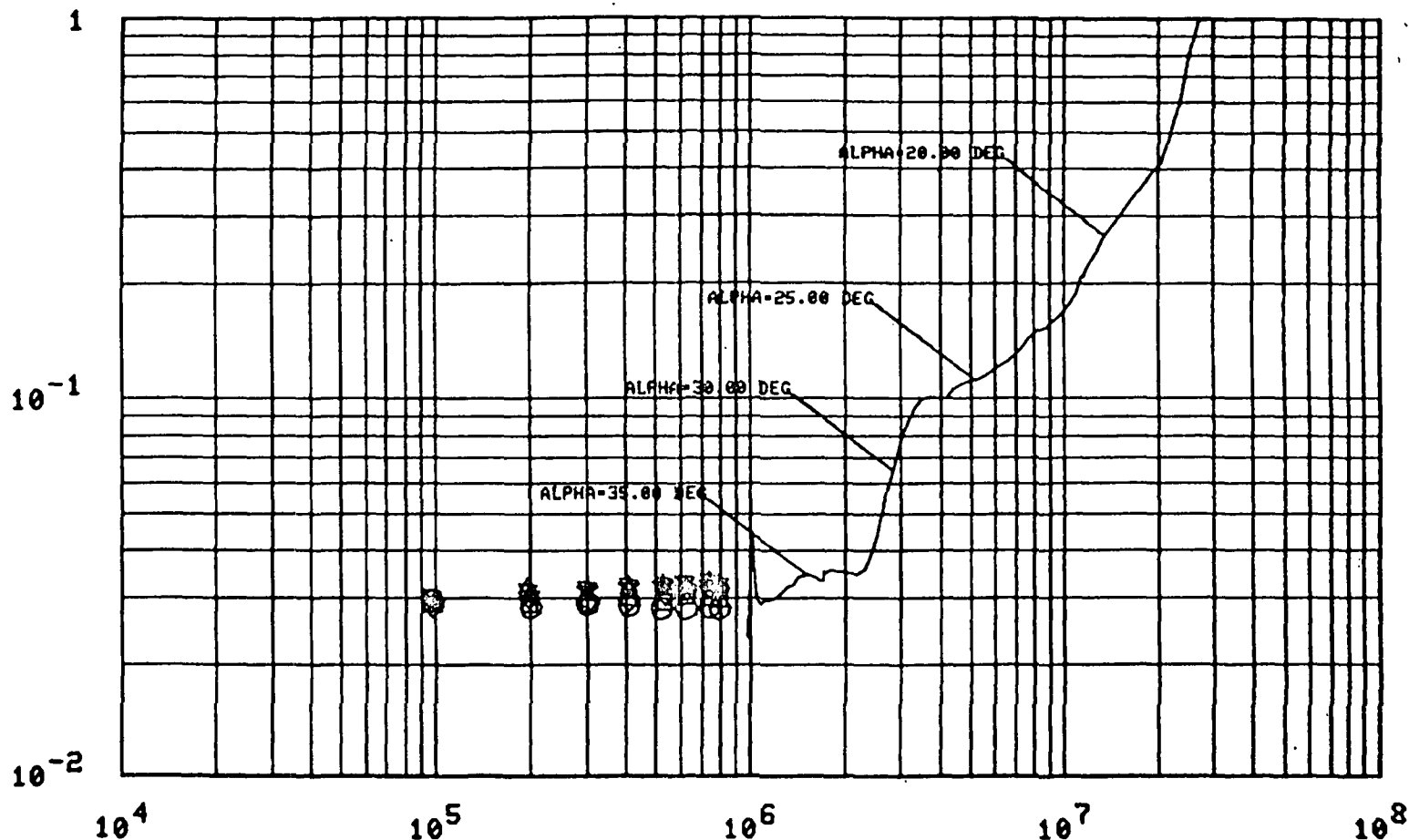
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9892A/H-REF 1065-1500 SEC

FILM COEFF. : H/H-REF



REYNOLDS NUMBER (NS)

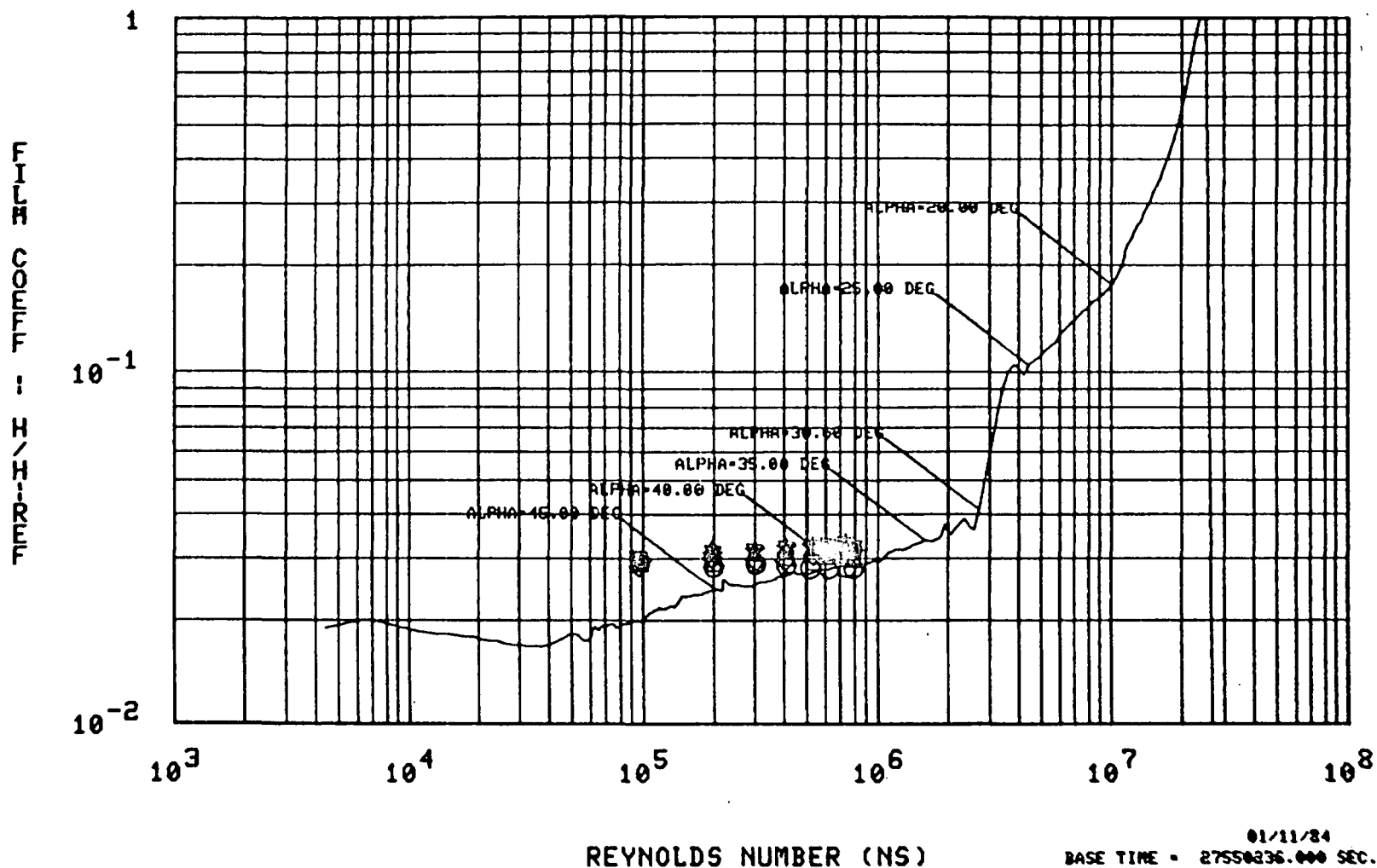
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9892A/H-REF 200-1530 SEC

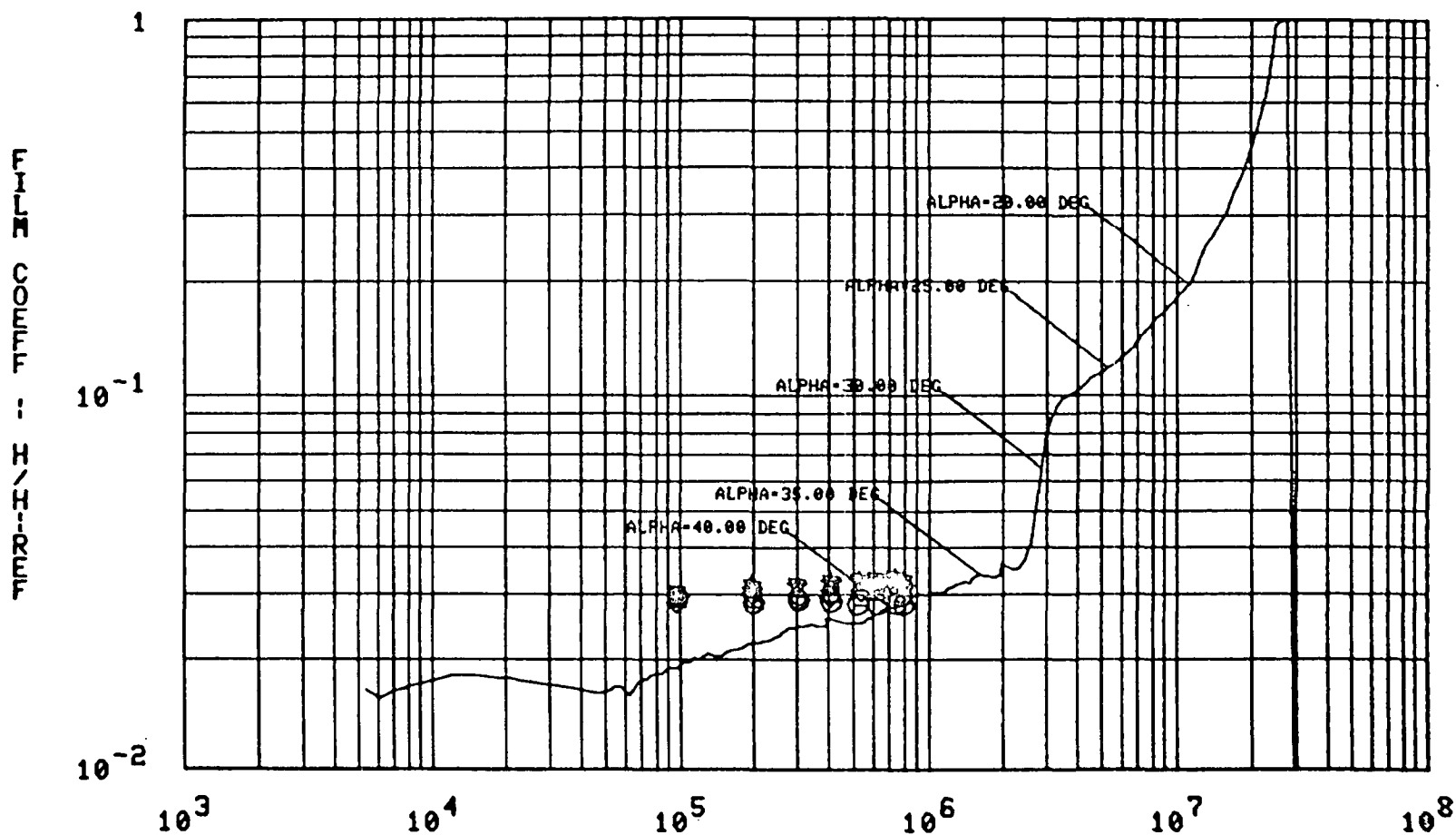


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9892A/H-REF 200-1440 SEC



B-13

REYNOLDS NUMBER (NS)

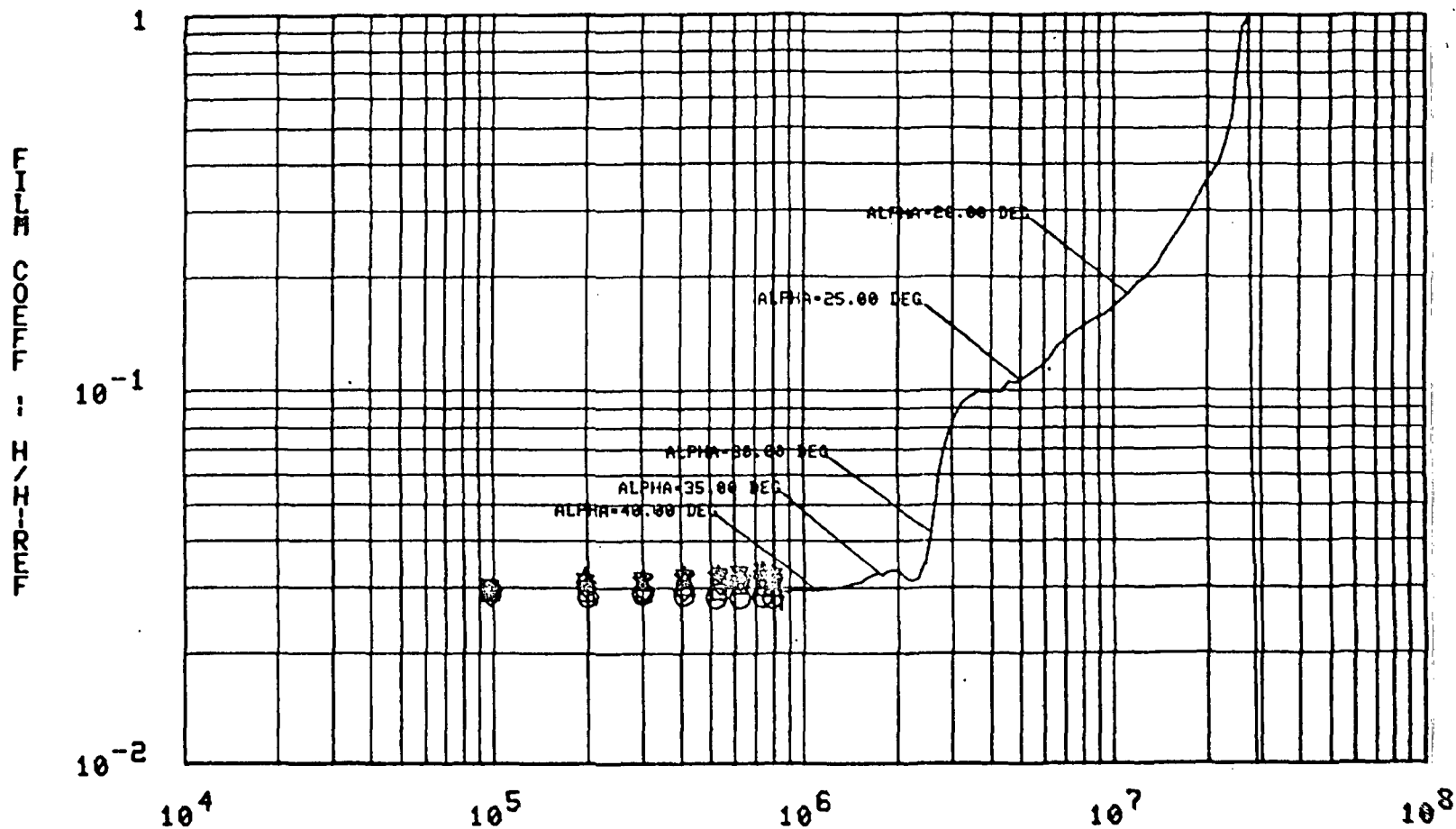
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.20$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9892A/H-REF 965-1360 SEC



REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 16040423.000 SEC.

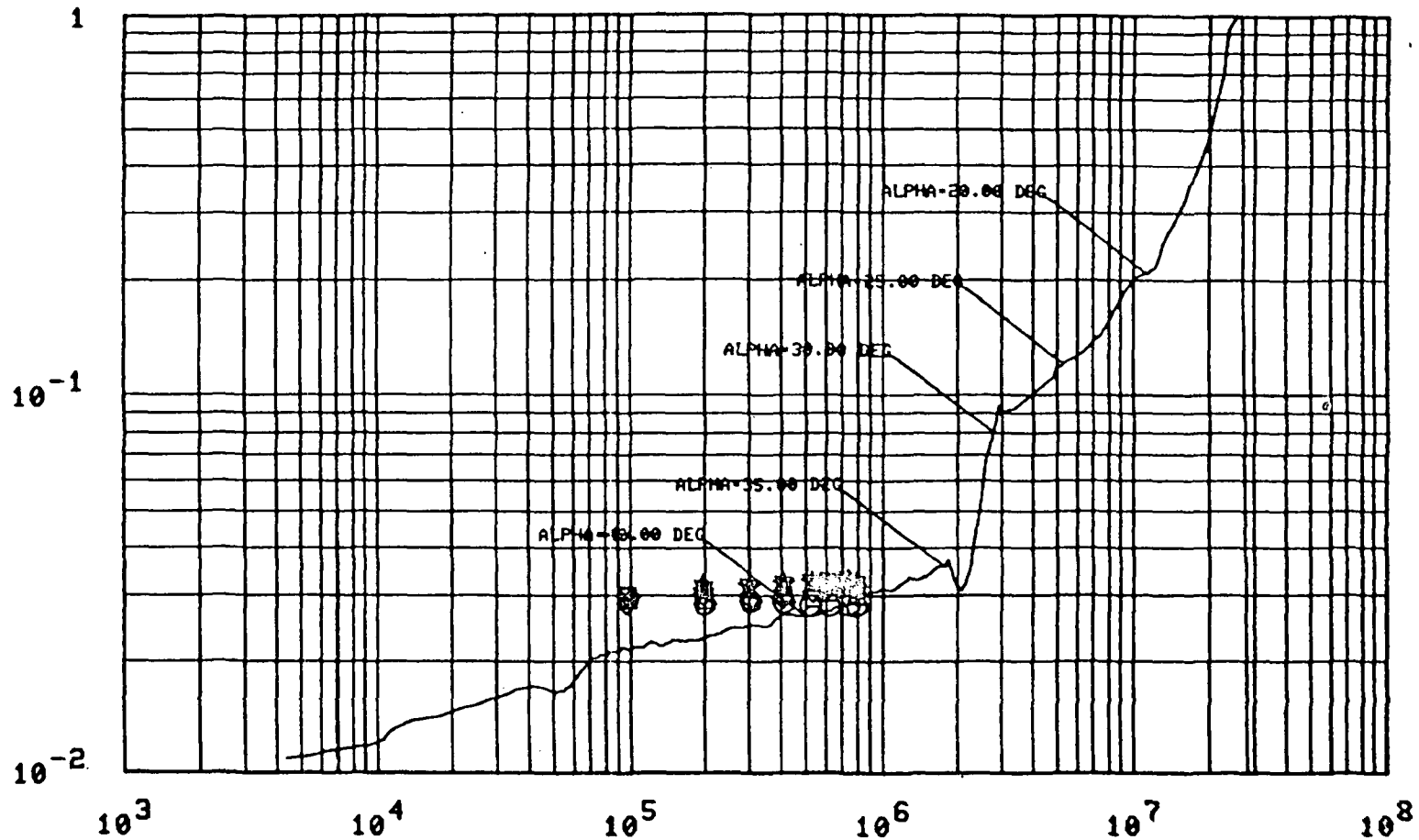
STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9892A/H-REF 150-1430 SEC

LINE COEFF. - H/H-REF



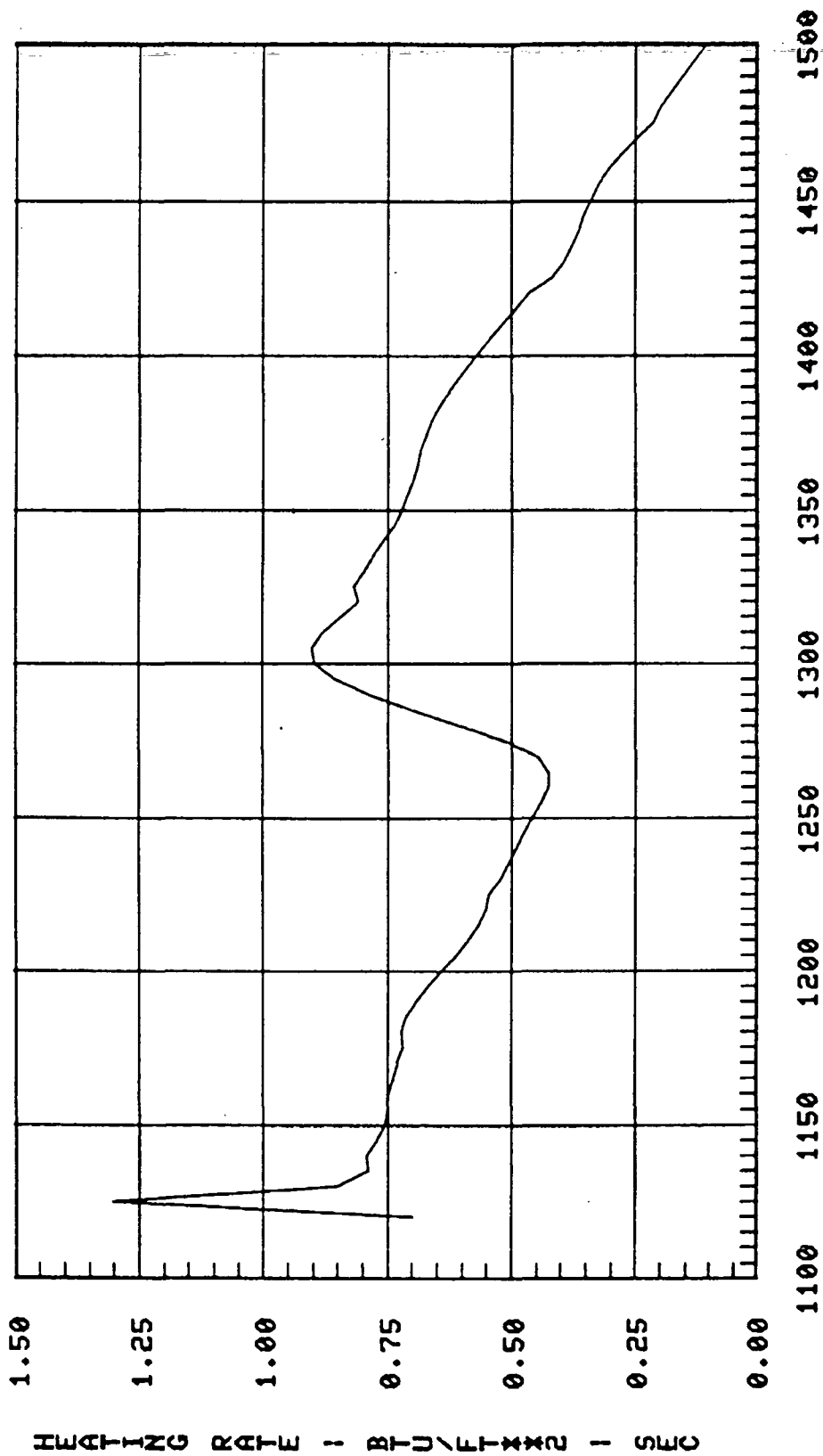
REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.



STS-1 (107 FT LENGTH SIDE FUS X/L=0.20) Z=400

U07T9892A

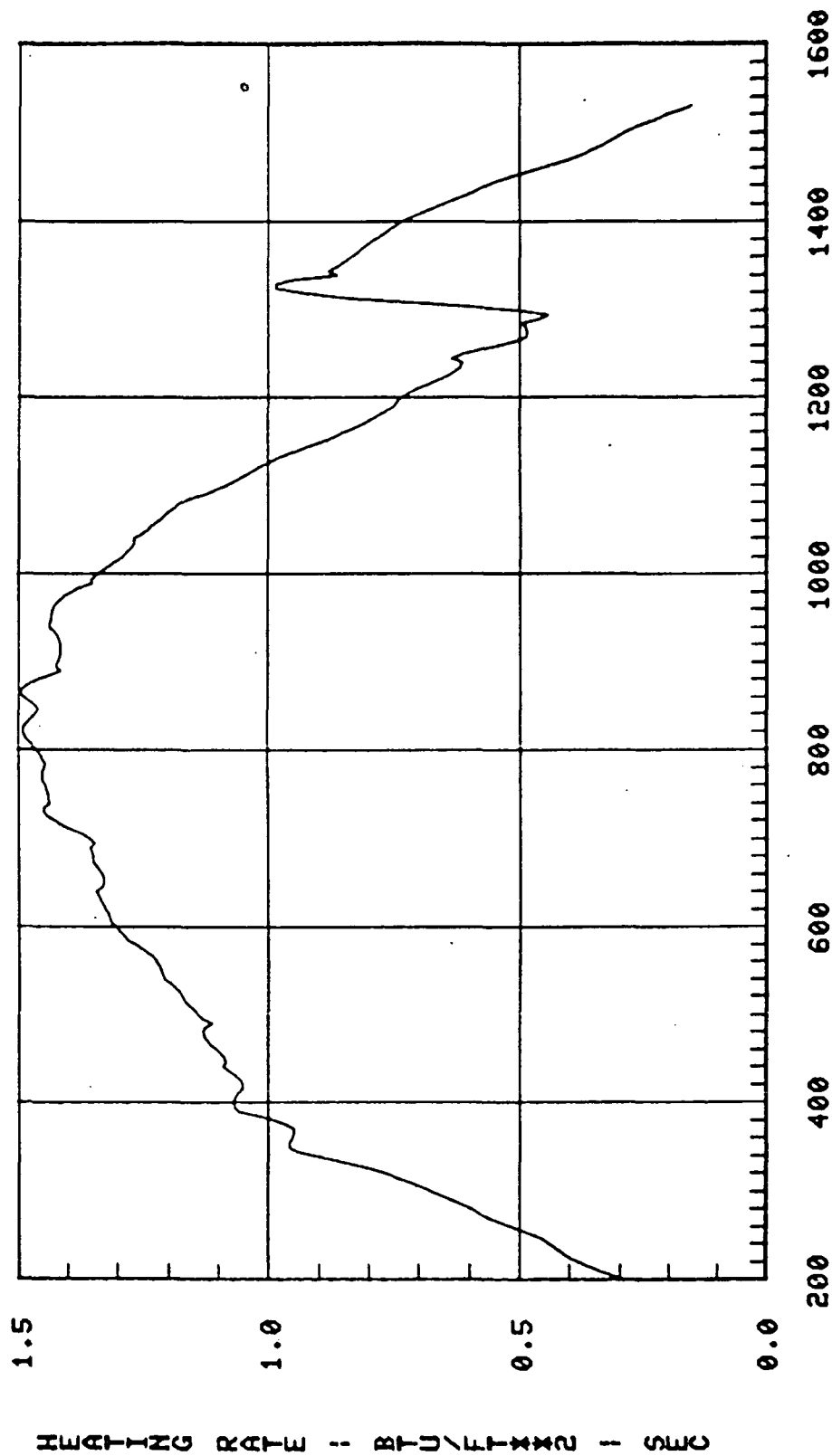


TIME - SECONDS

01/11/84

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

U07T9892A

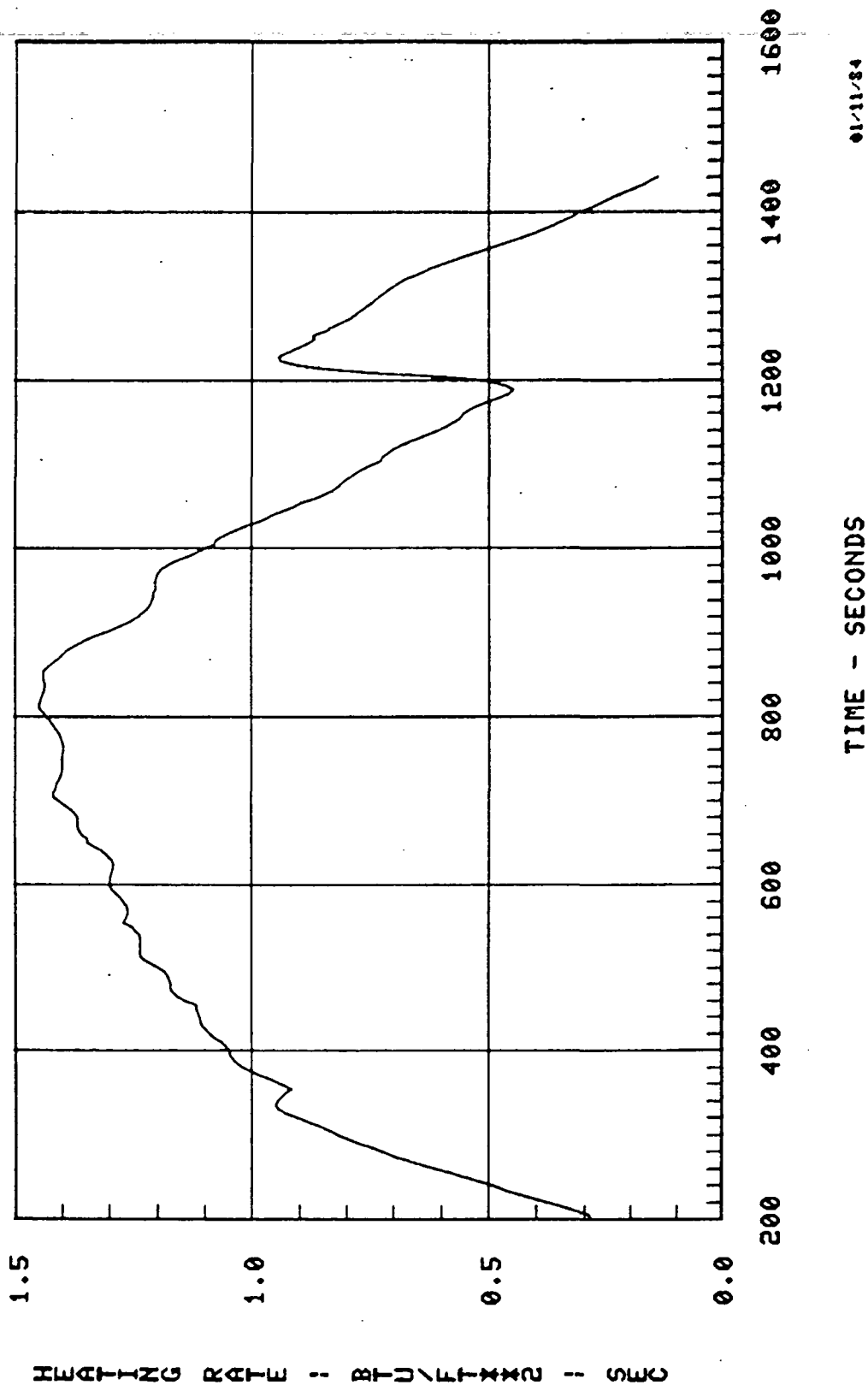


TIME - SECONDS

01/11/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

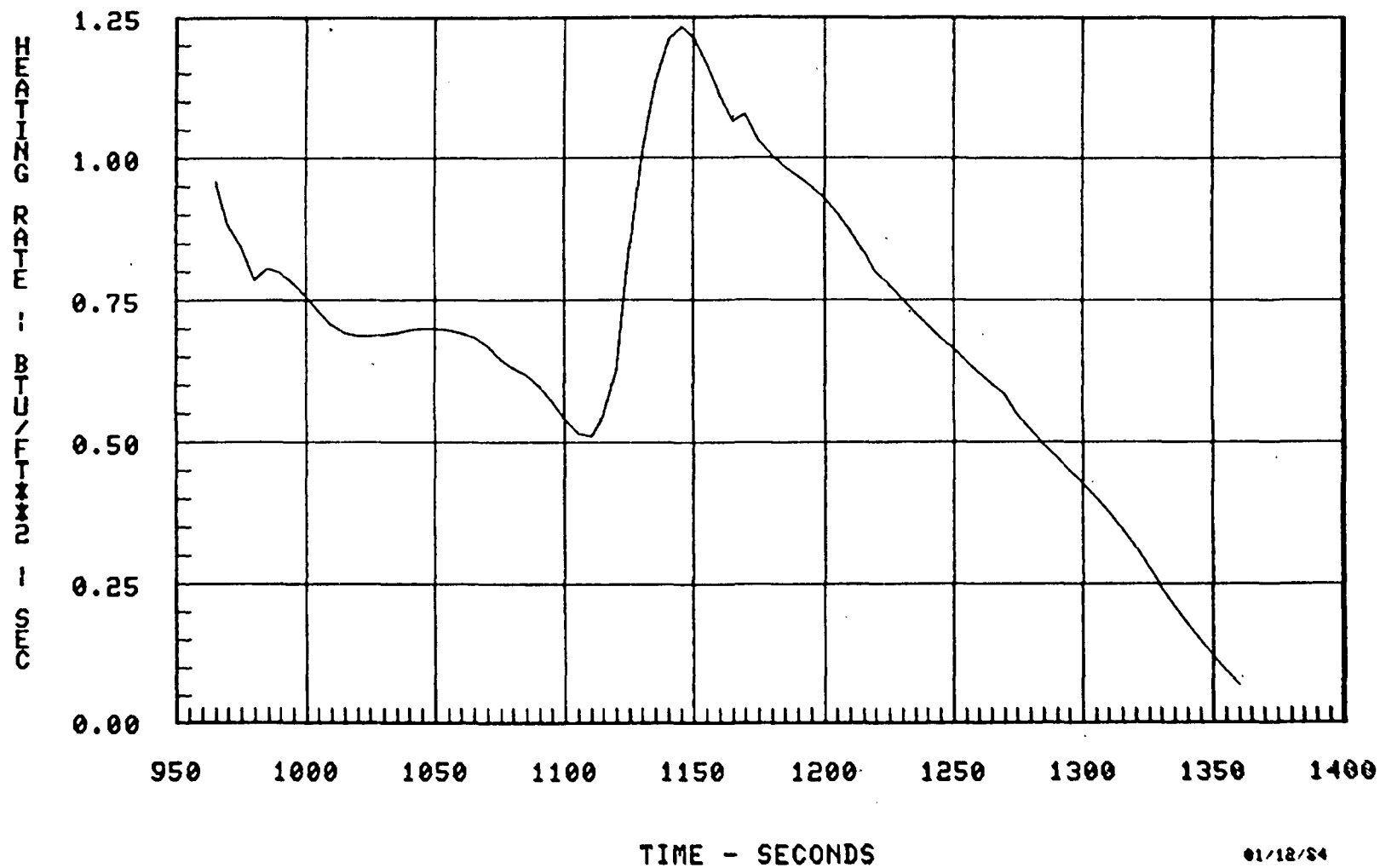
U07T9892A



01/11/84

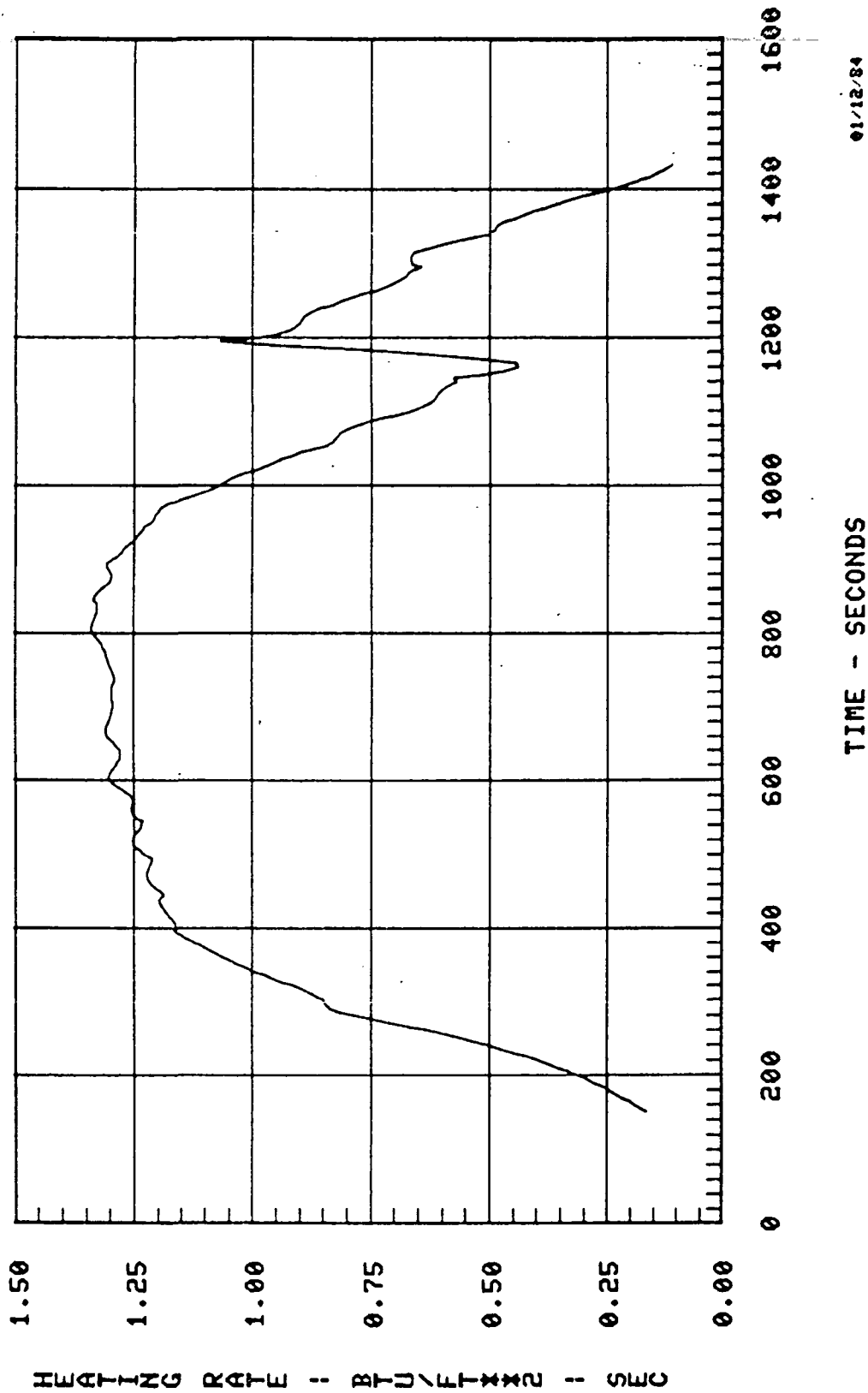
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

U07T9892A



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

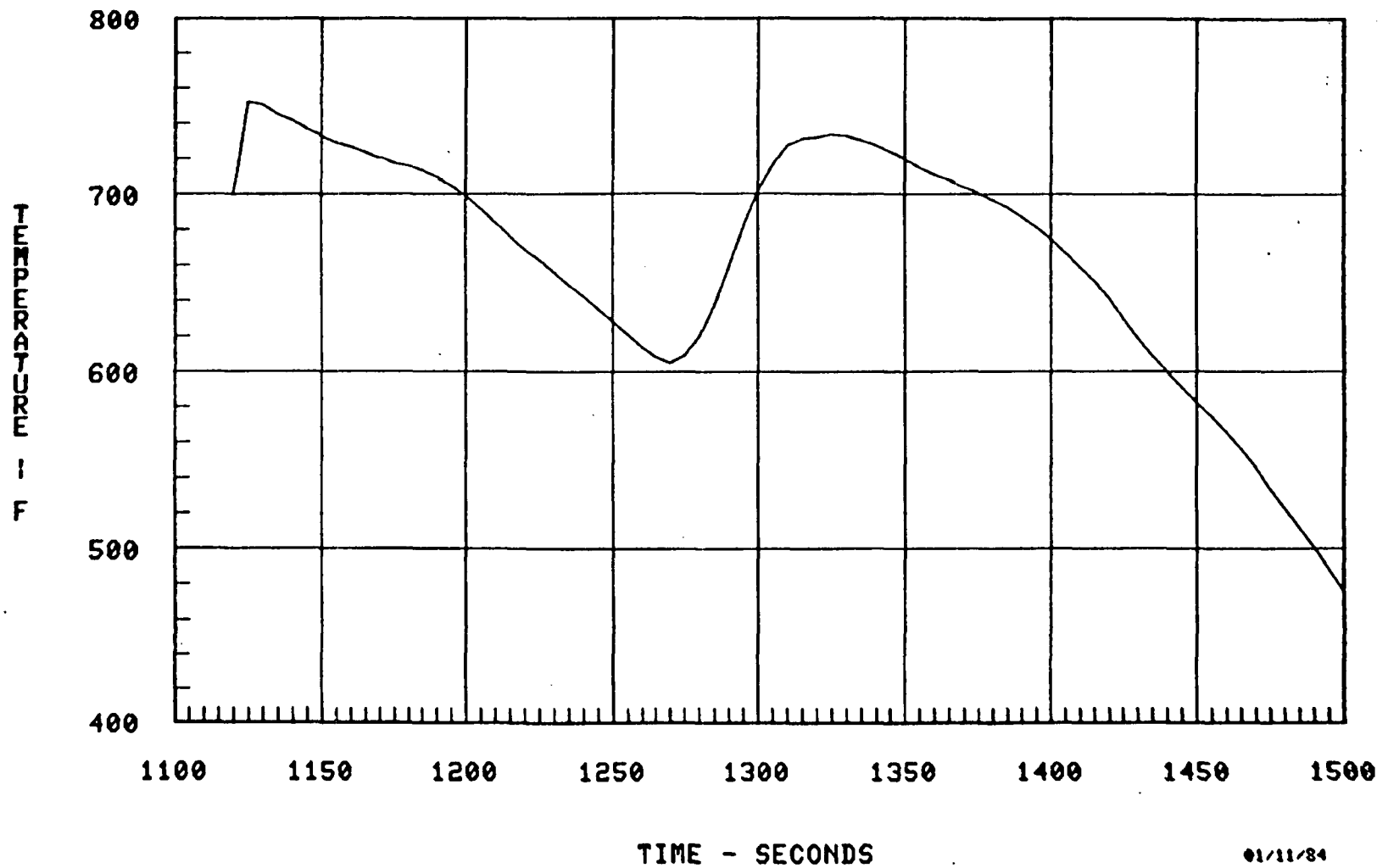
U07T9892A



01/12/84

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

U07T9892A

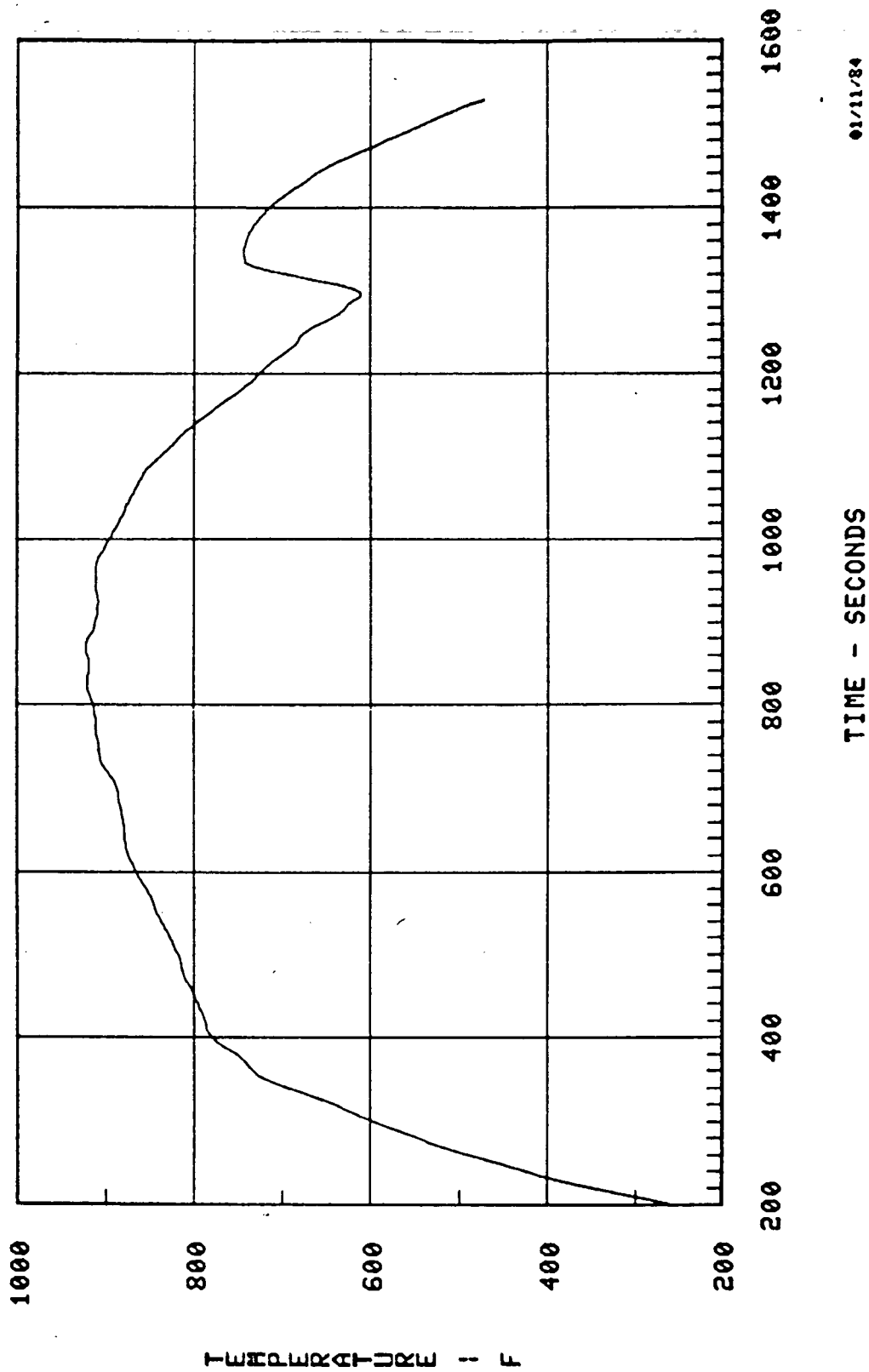


B-21

01/11/84

STS-2 (107 FT LENGTH SIDE FUS X/L=0.20) Z=400

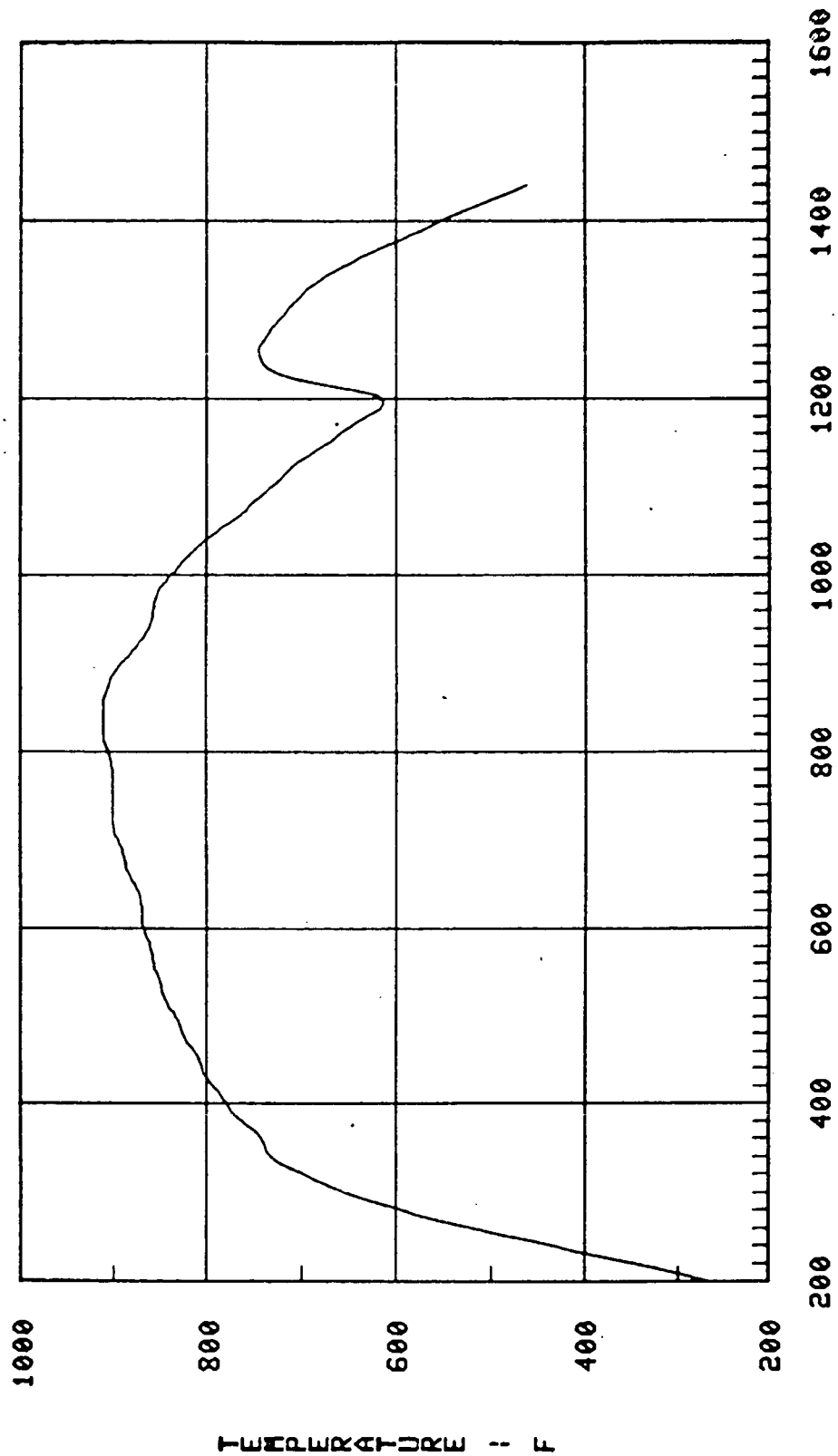
U07T9892A



01/11/84

STS-3 (107 FT LENGTH SIDE FUS X/L=0.20) Z=400

U07T9892A



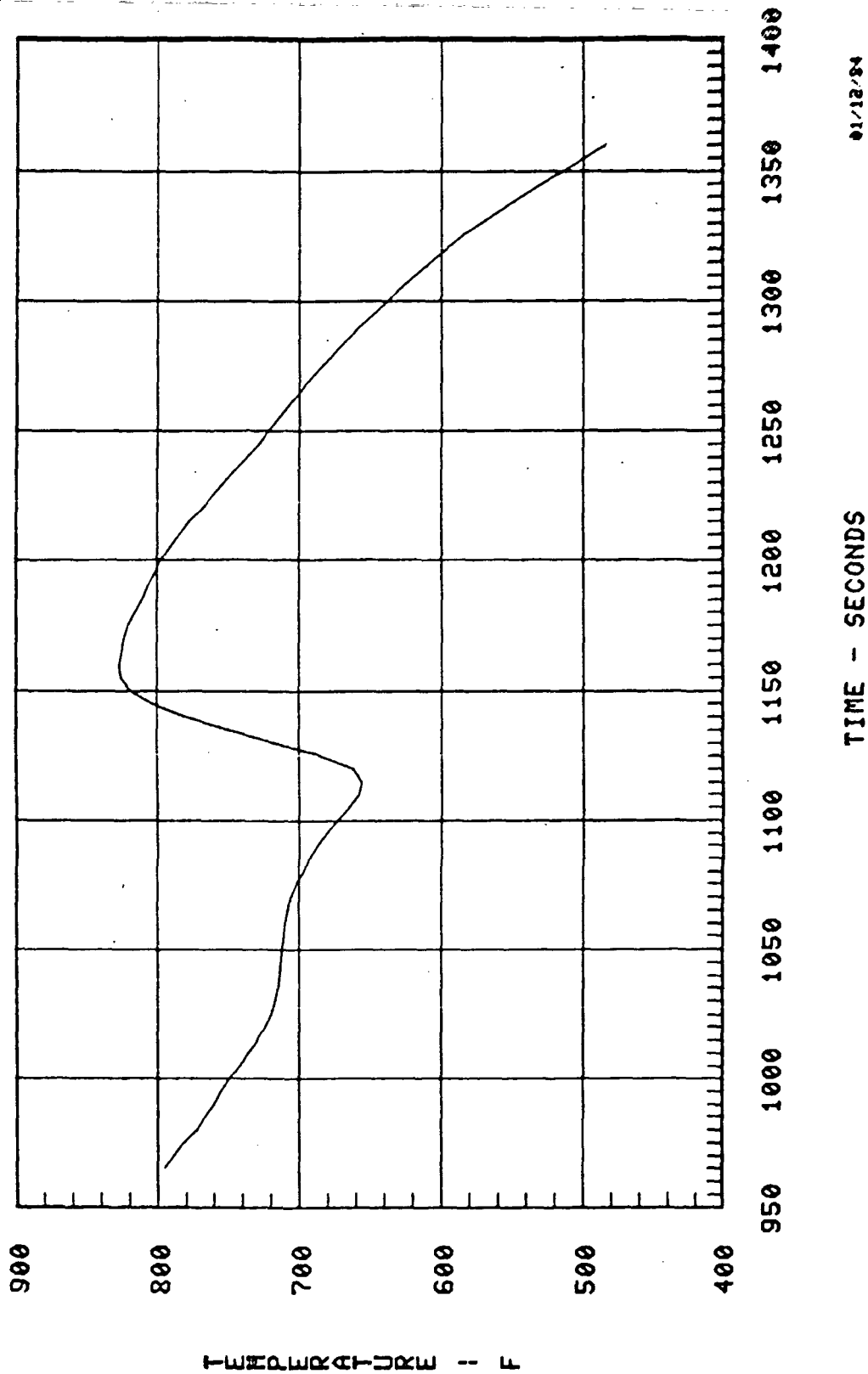
TIME - SECONDS

01/11/84



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

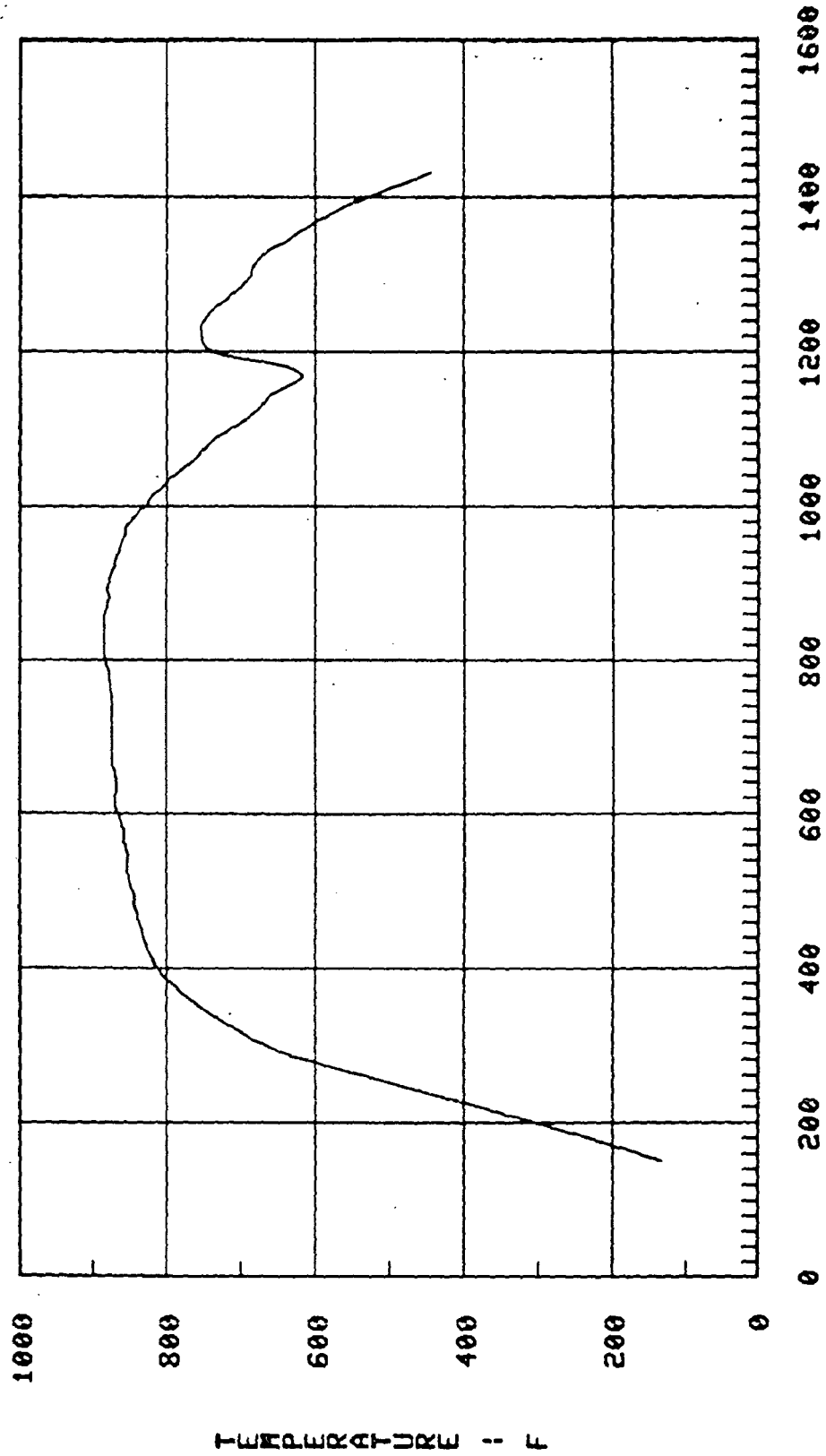
U07T9892A



01/12/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.20$ )  $Z=400$

U07T9892A



TIME - SECONDS

01/12/84

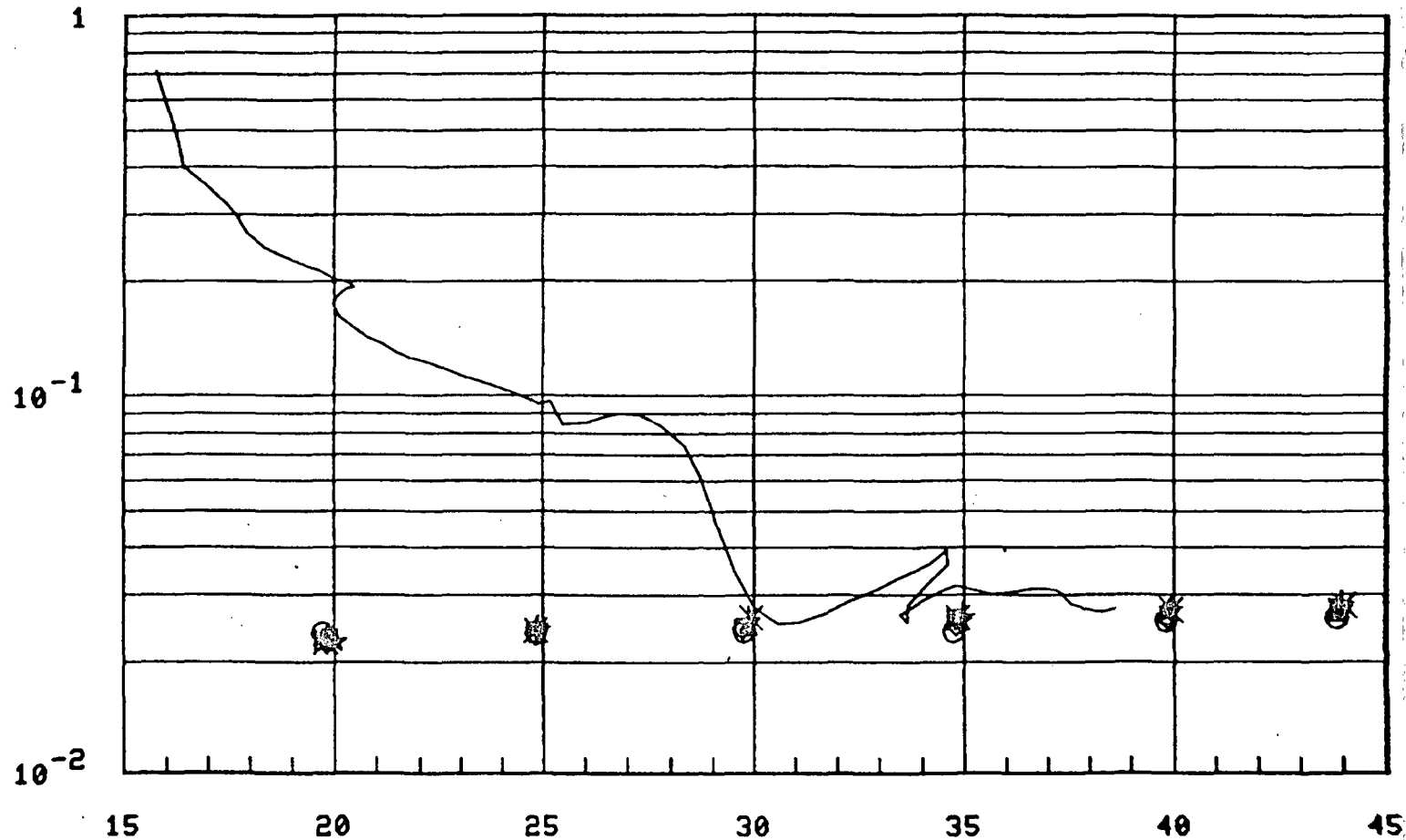
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

O  
□  
◇  
△  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9916A/H-REF 1065-1500 SEC

FILM COEFF. - H/H-REF



ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 09049744.000 SEC.

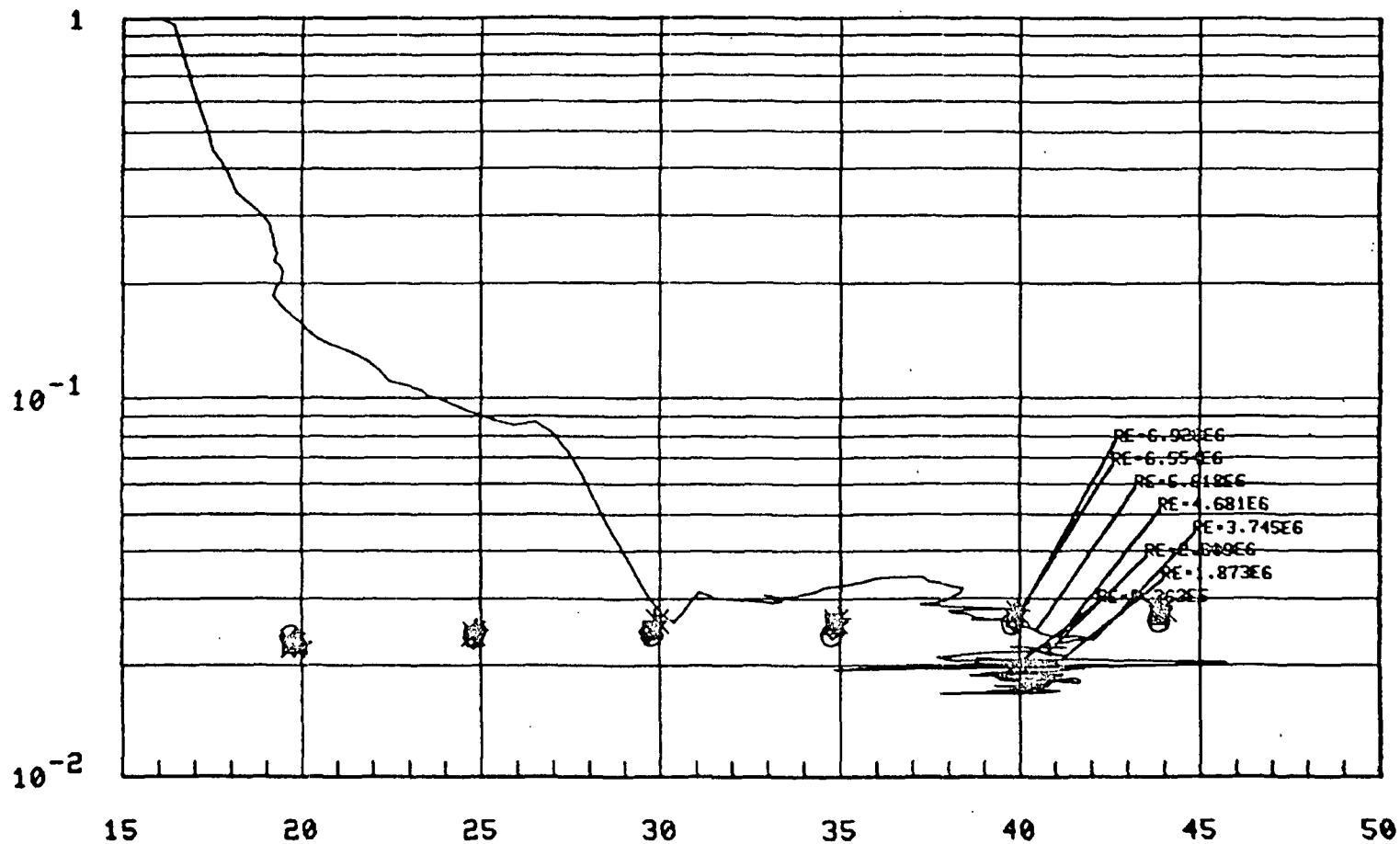
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

O  
 □  
 △  
 ×  
 +  
 X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9916A/H-REF 200-1530 SEC

LINE COUNT - H-H-REF



ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 27550236.000 SEC.

○ □ ◇ △ ▽ ☆ † ×

U07T9916A/H-REF 200-1440 SEC



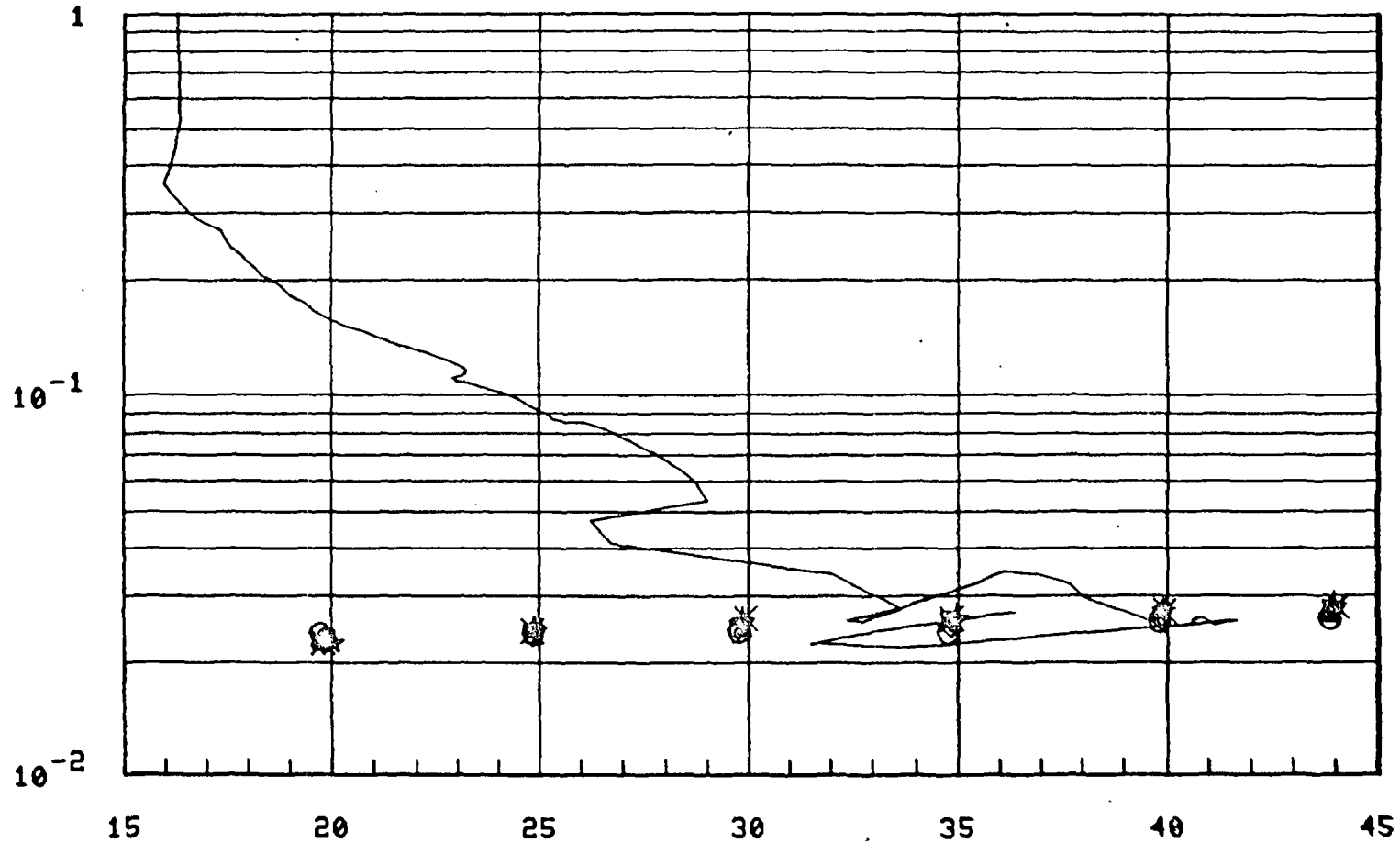
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

○  
□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9916A/H-REF 965-1360 SEC

FILE CODE - H-H-REF



ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 16040423.000 SEC.

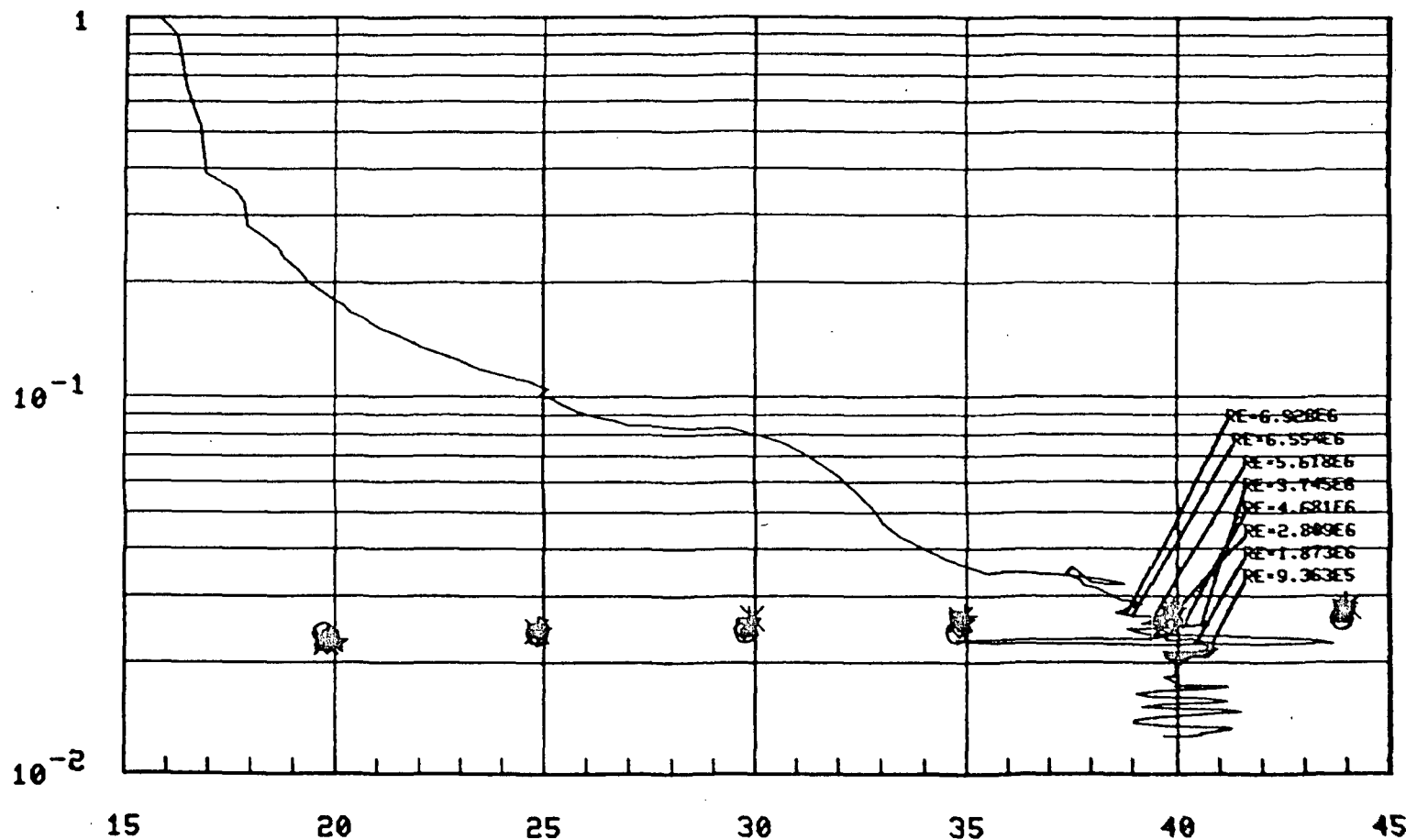
# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9916A/H-REF 150-1430 SEC

FILE CODE : H/H-REF



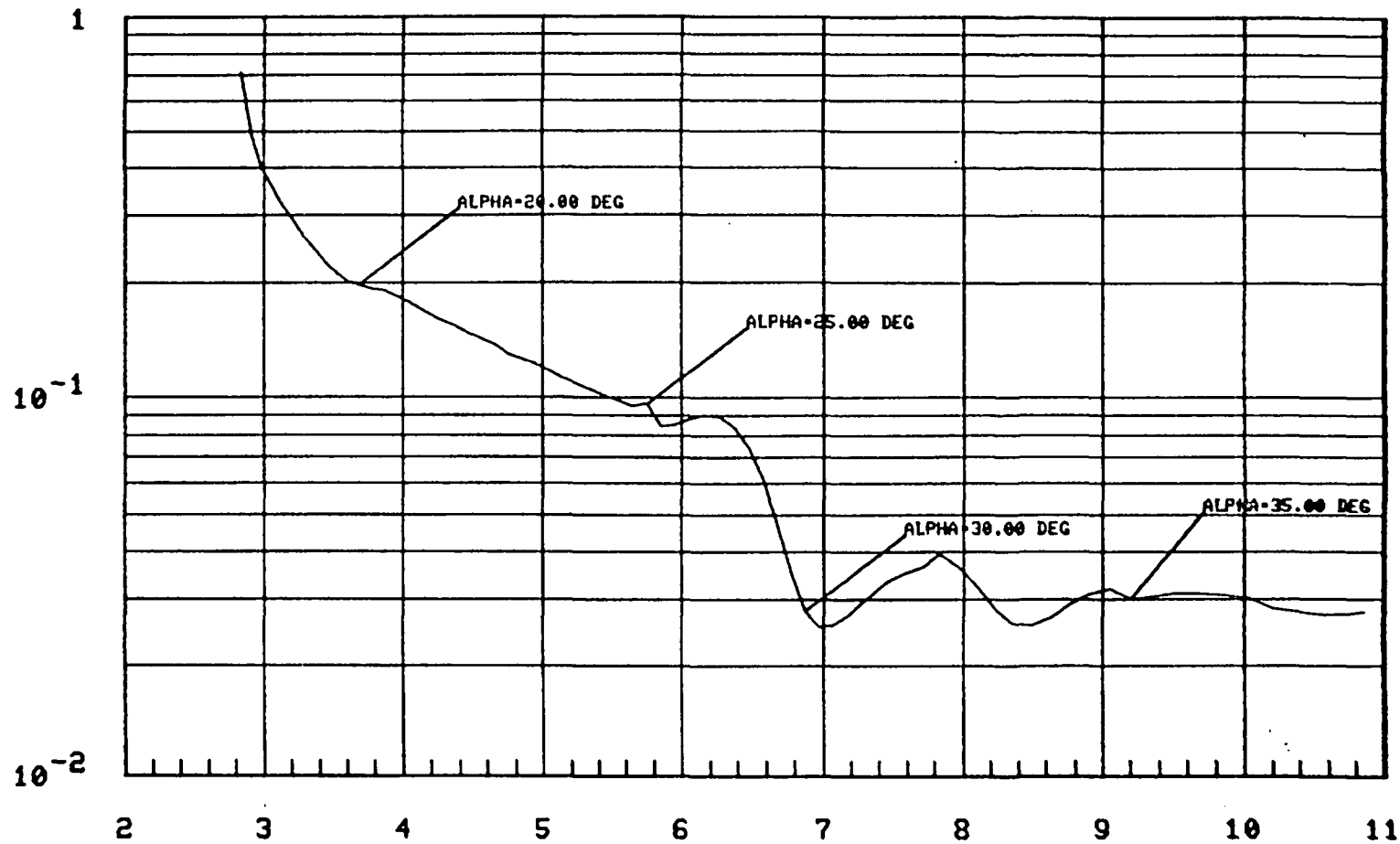
ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

U07T9916A/H-REF 1065-1500 SEC

FUS COEFF - H/H-REF



B-31

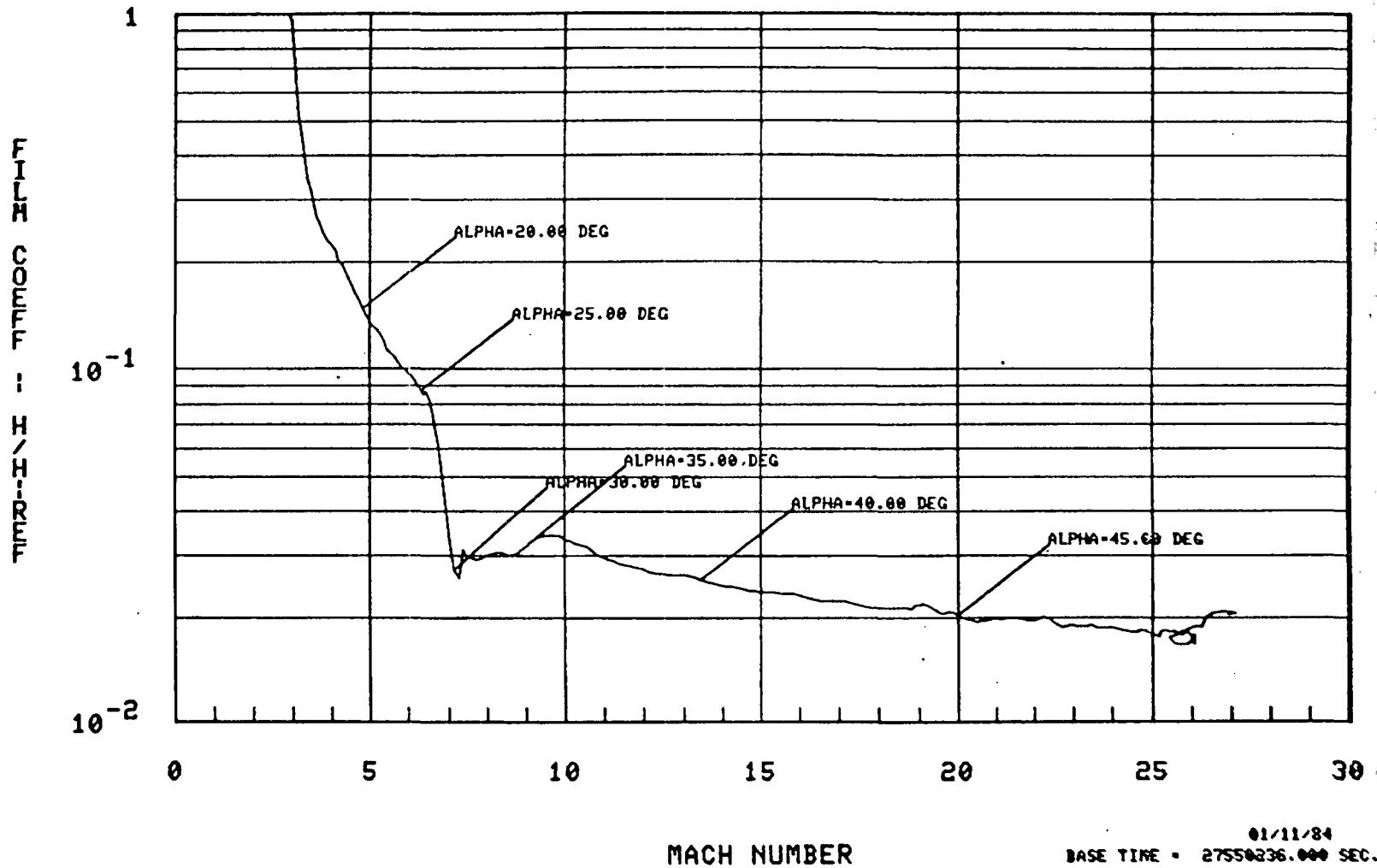
MACH NUMBER

01/11/84  
BASE TIME - 09049744.000 SEC.



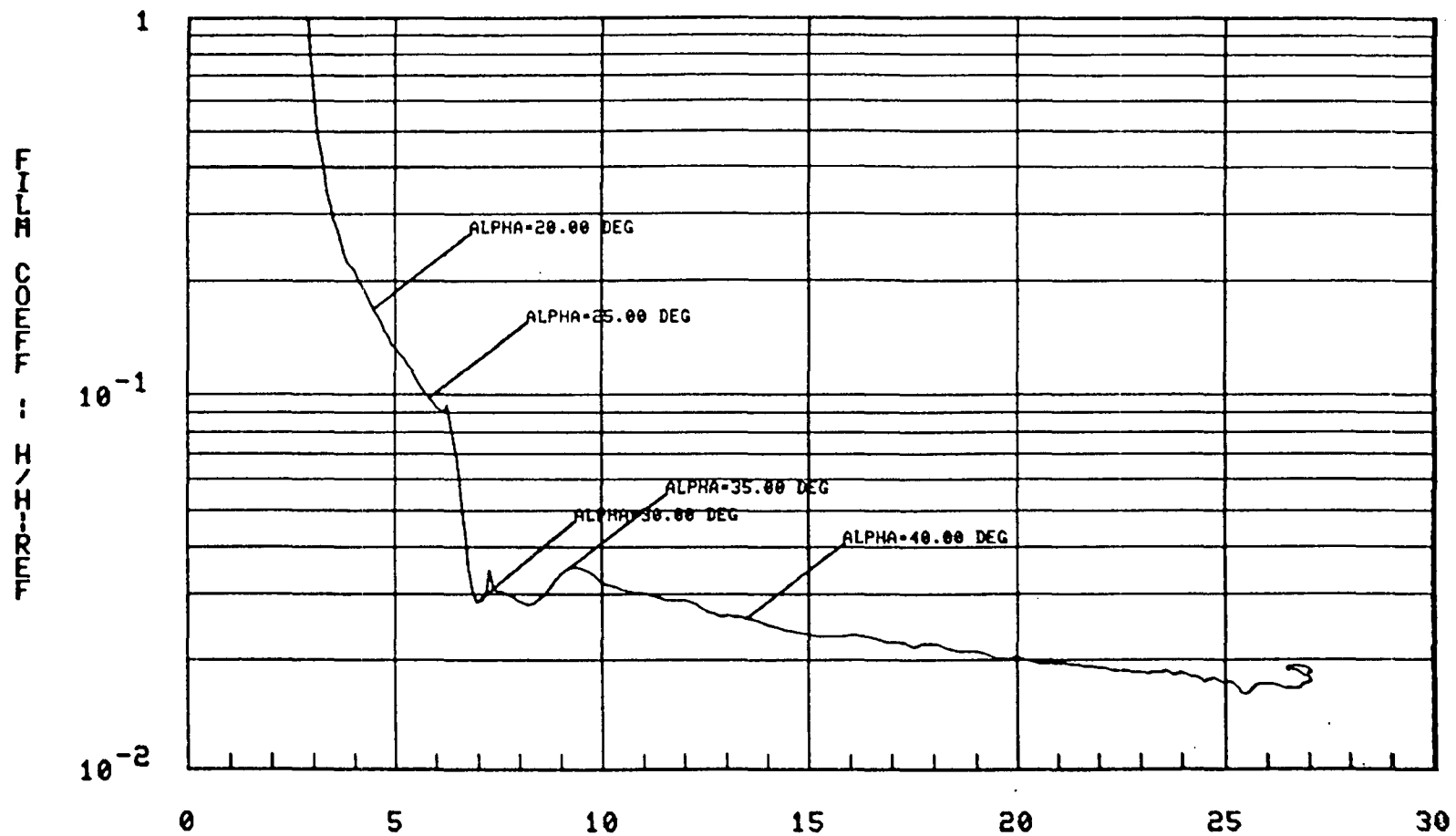
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

U07T9916A/H-REF 200-1530 SEC



STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

U07T9916A/H-REF 200-1440 SEC



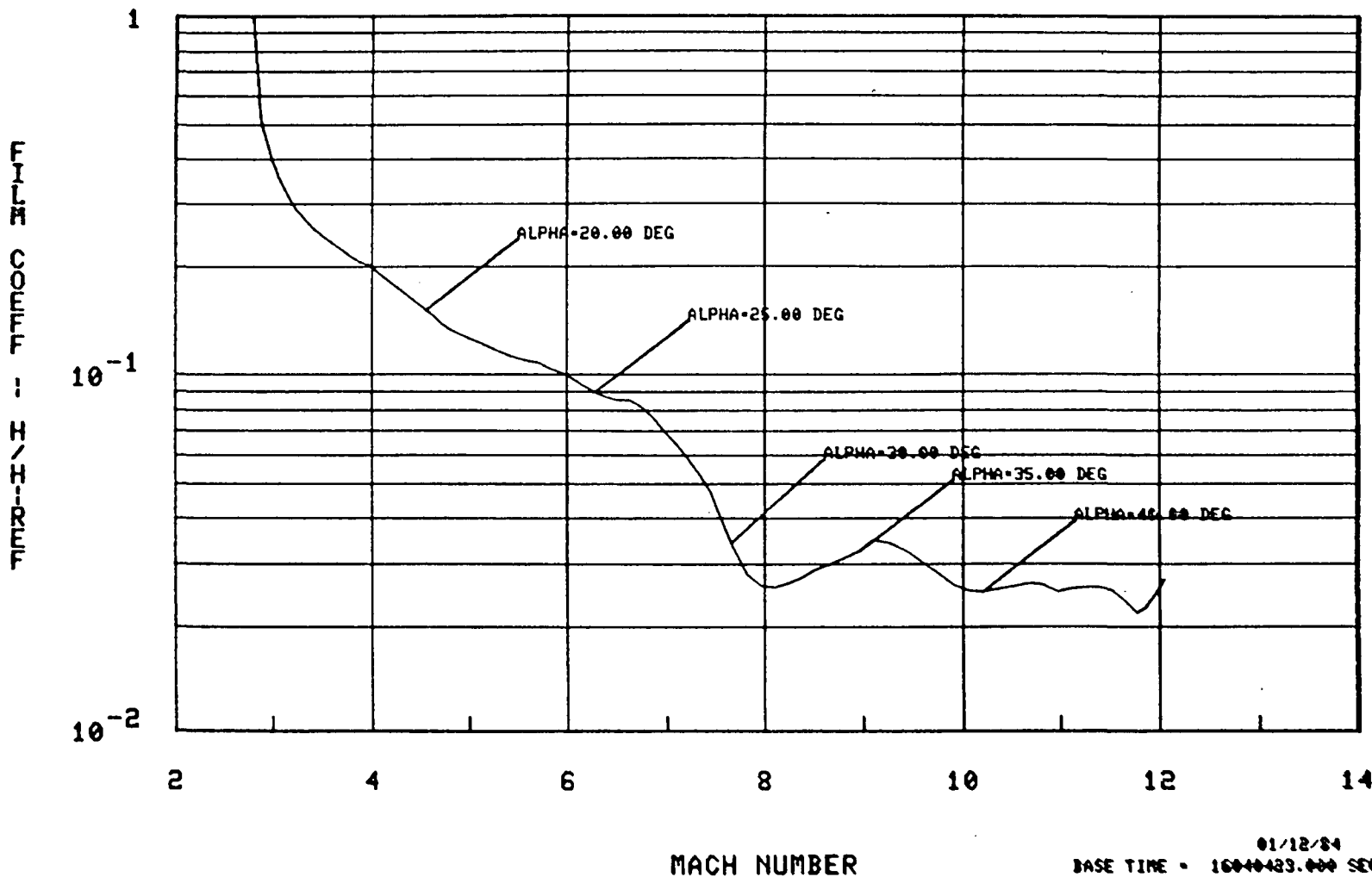
MACH NUMBER

01/11/84  
BASE TIME - 07745684.040 SEC.

B-33

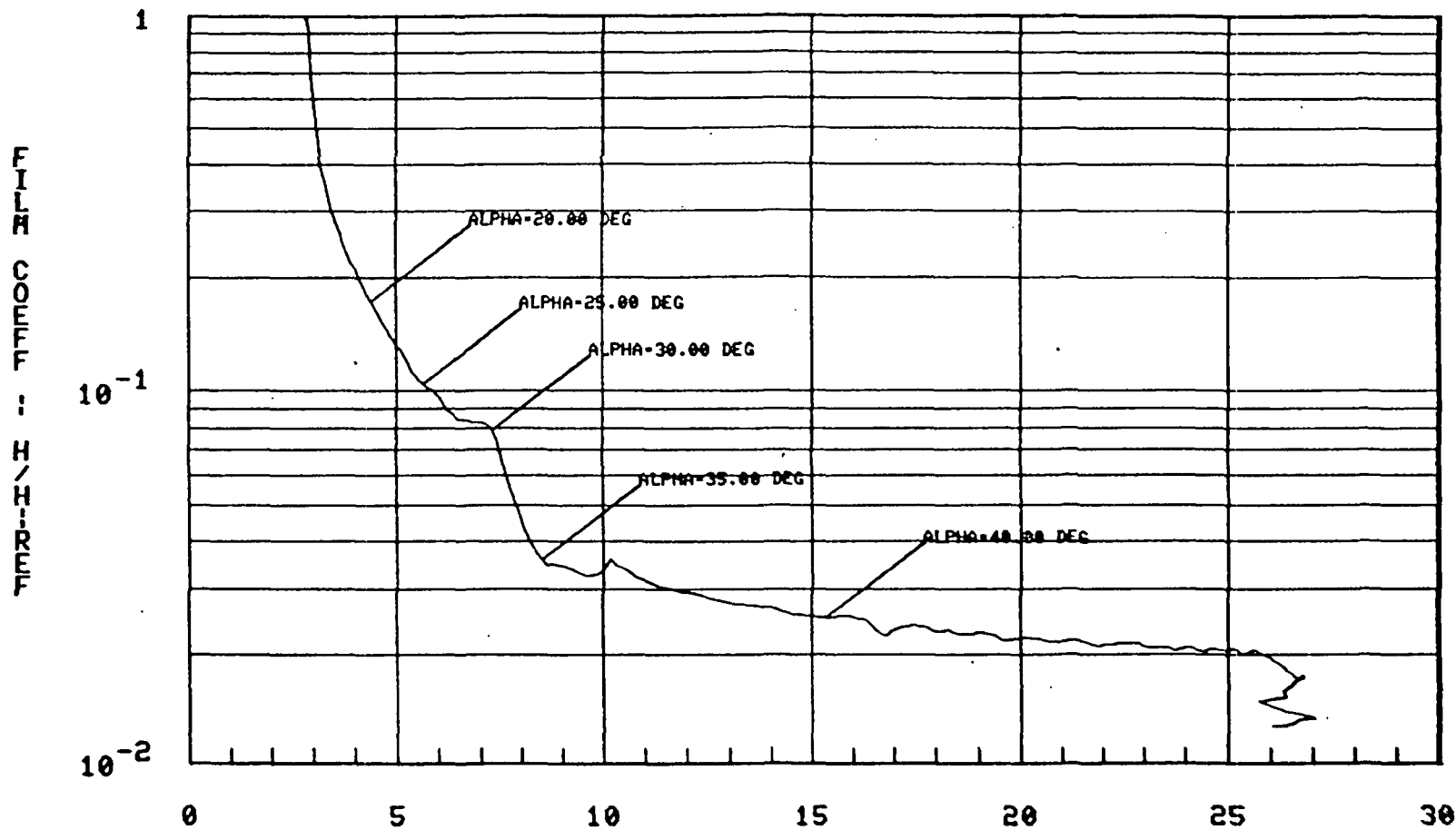
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

U07T9916A/H-REF 965-1360 SEC



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

U07T9916A/H-REF 150-1430 SEC



B-35

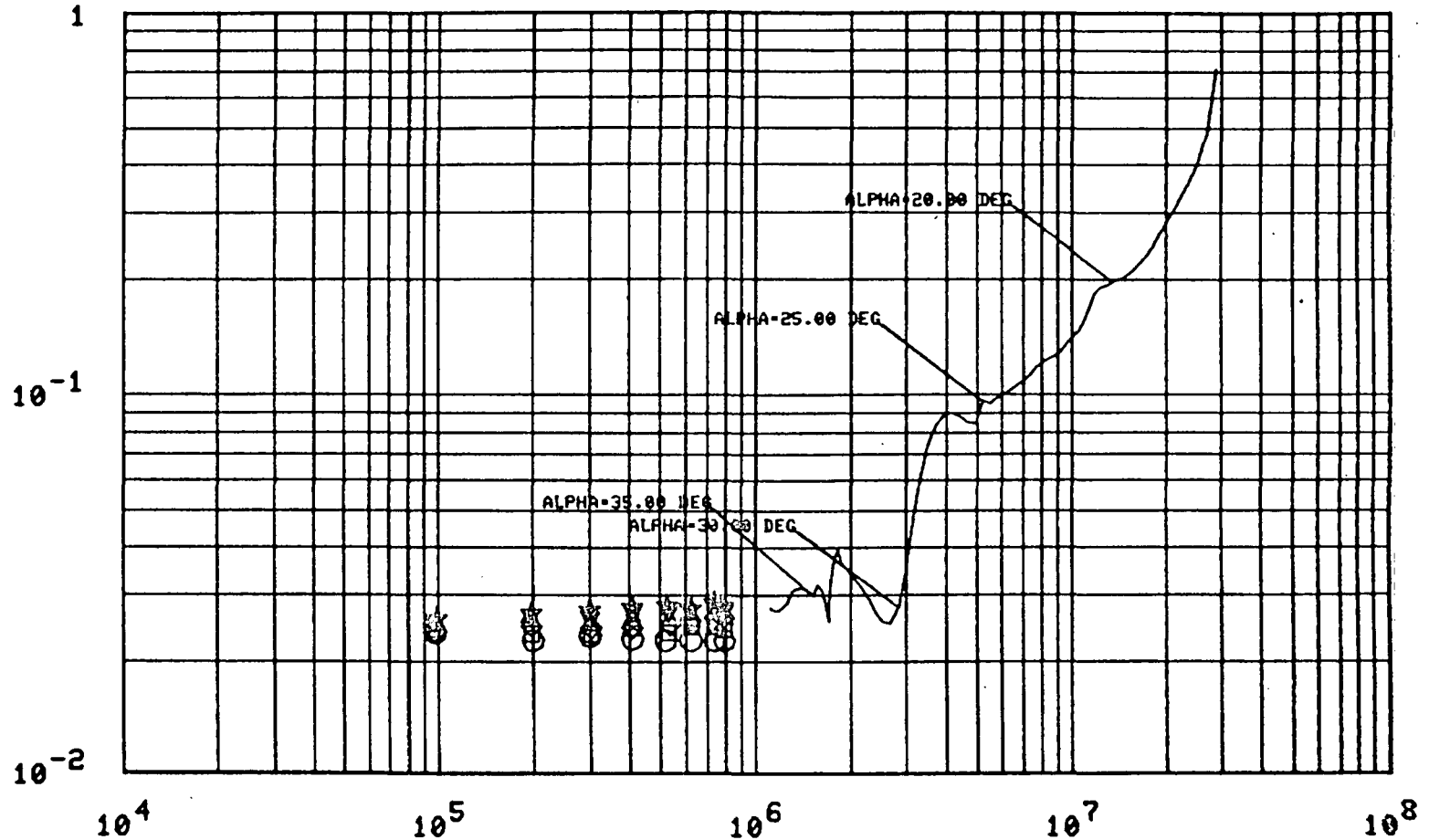
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9916A/H-REF 1065-1500 SEC

LINE CODE - H/H-REF



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 09049744.000 SEC.

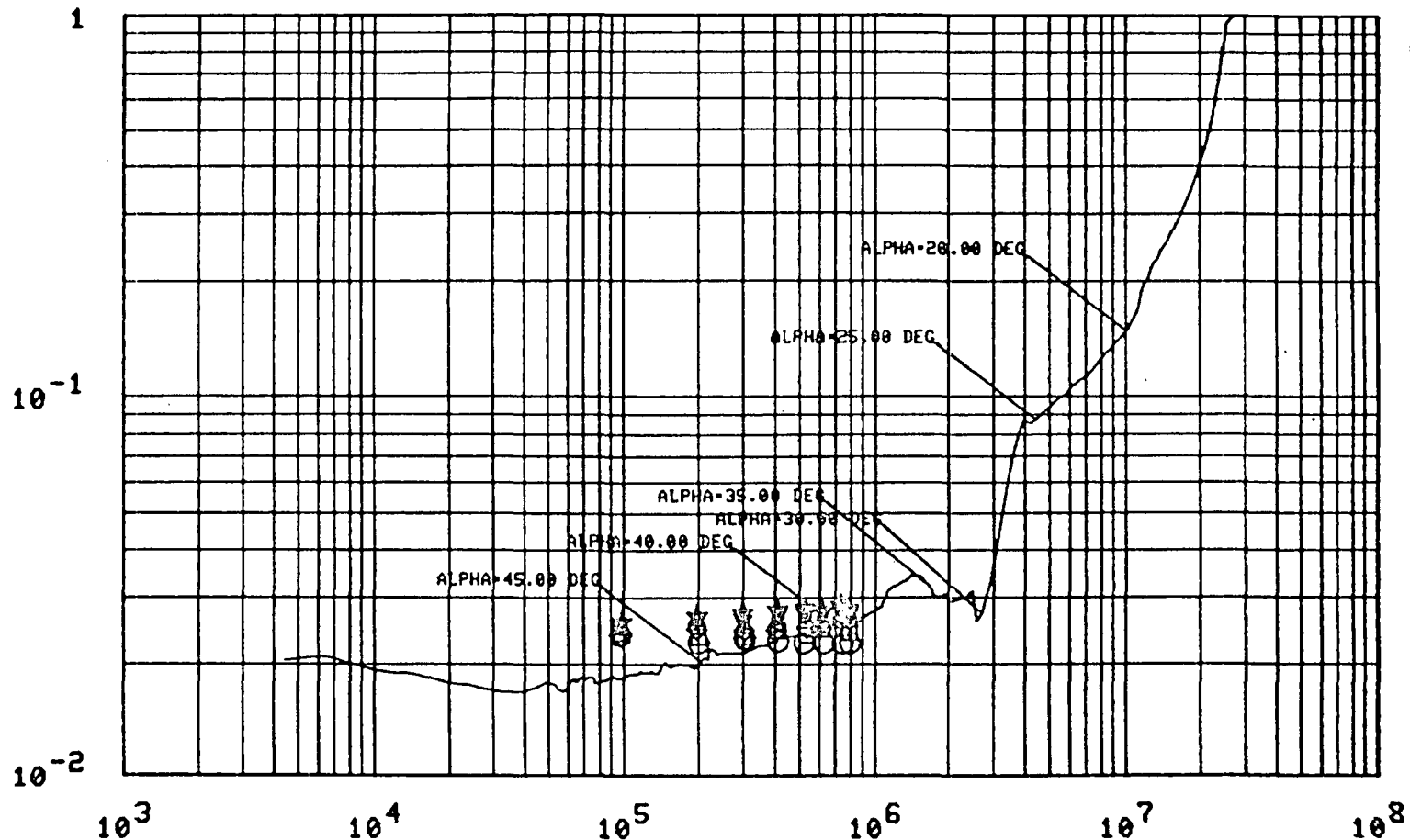
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9916A/H-REF 200-1530 SEC

LINE CODE - H/H-REF



REYNOLDS NUMBER (NS)

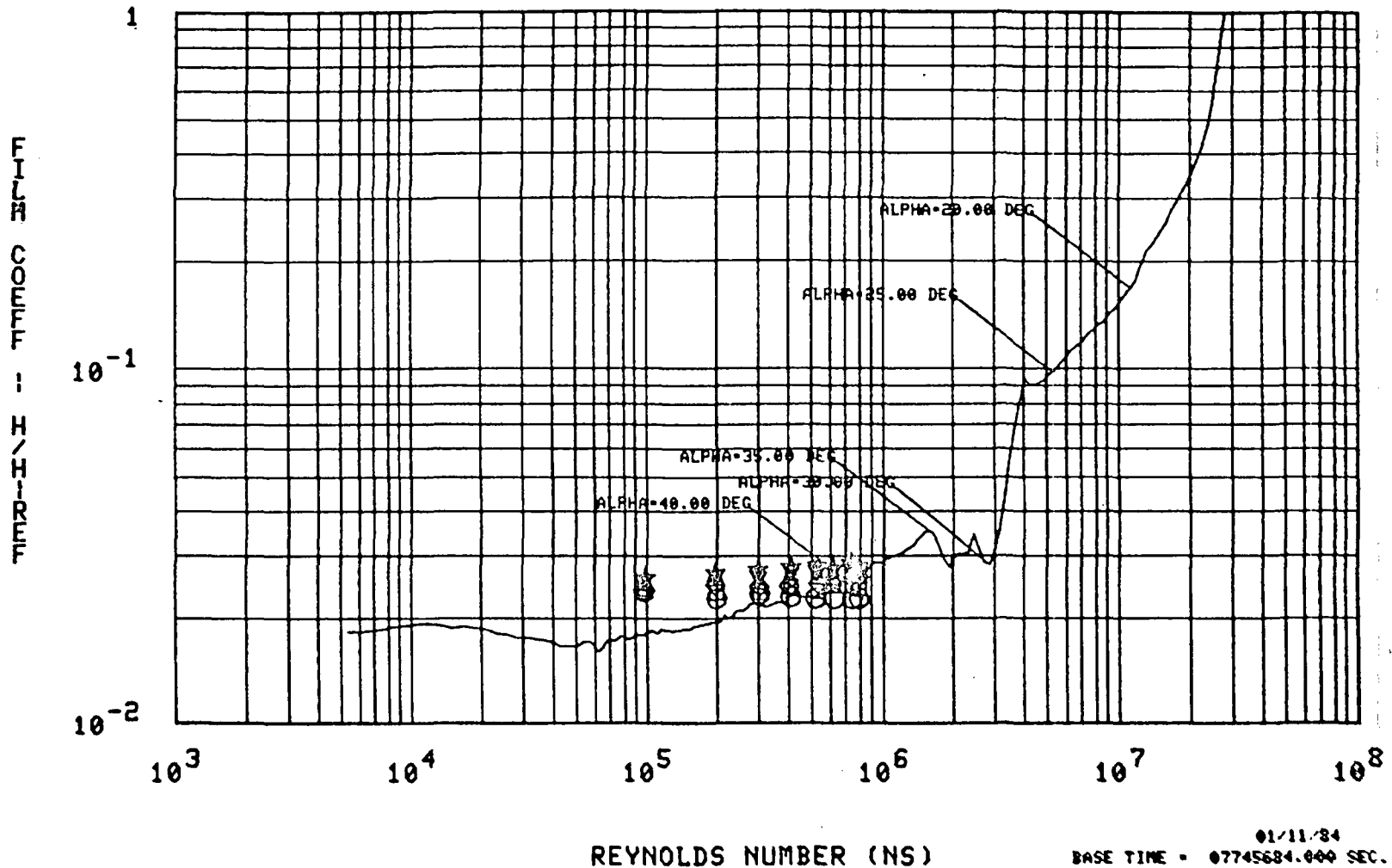
01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

○  
◇  
△  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9916A/H-REF 200-1440 SEC



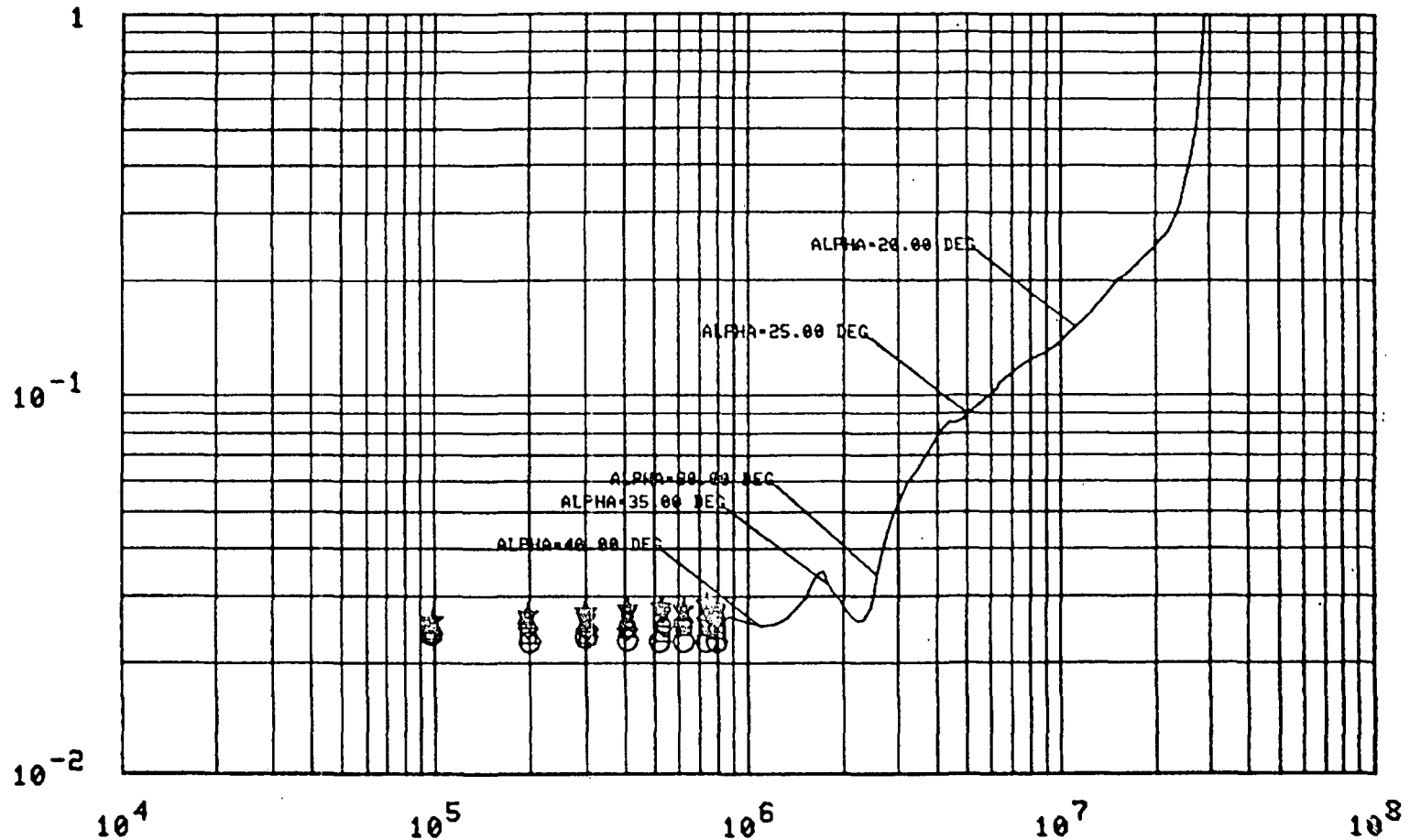
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

○ □ ◇ △ ▼ ★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9916A/H-REF 965-1360 SEC

FILE CODE - H/I-244



REYNOLDS NUMBER (NS)

01/18/84  
BASE TIME = 1604023.000 SEC.

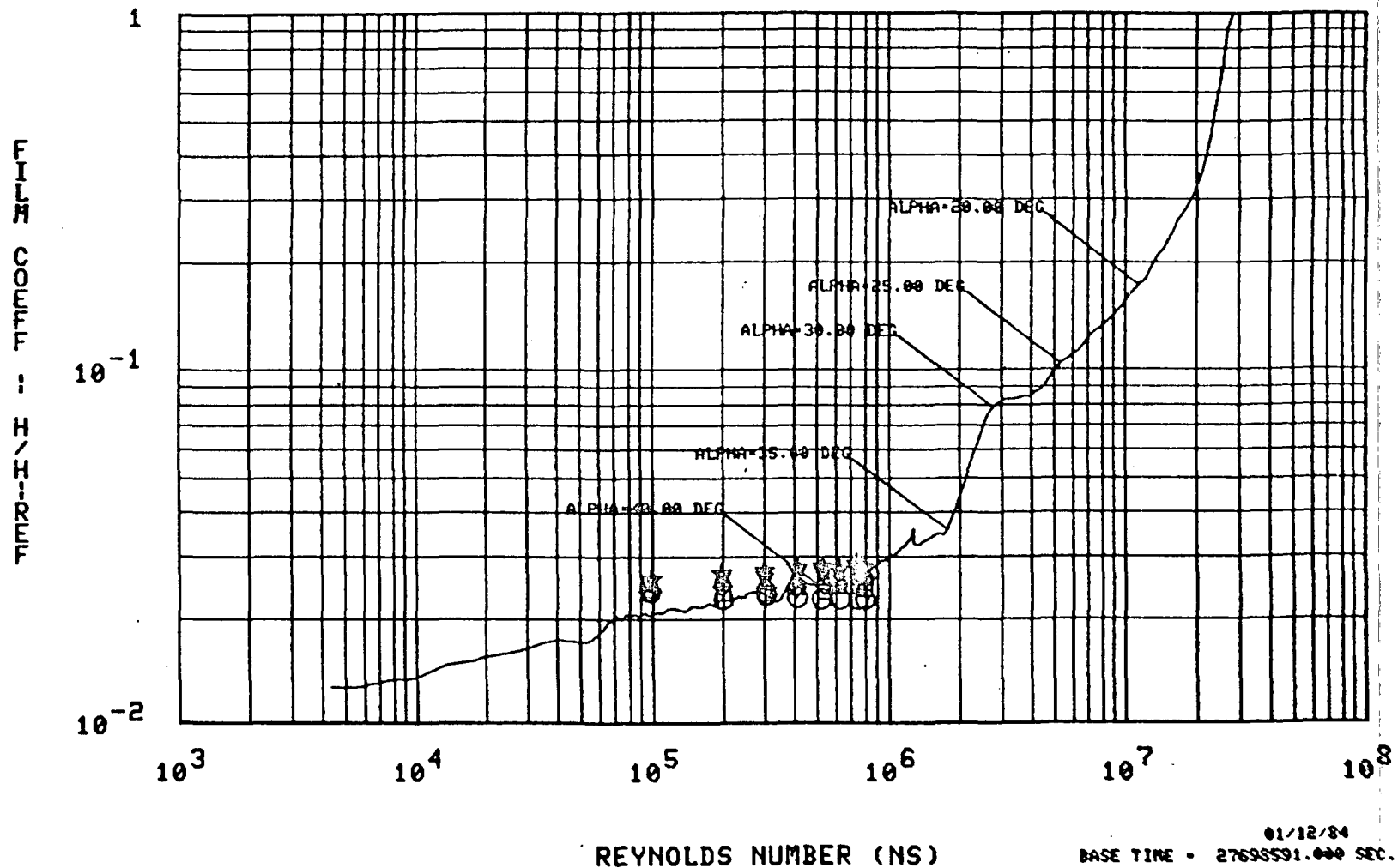


# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.23$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

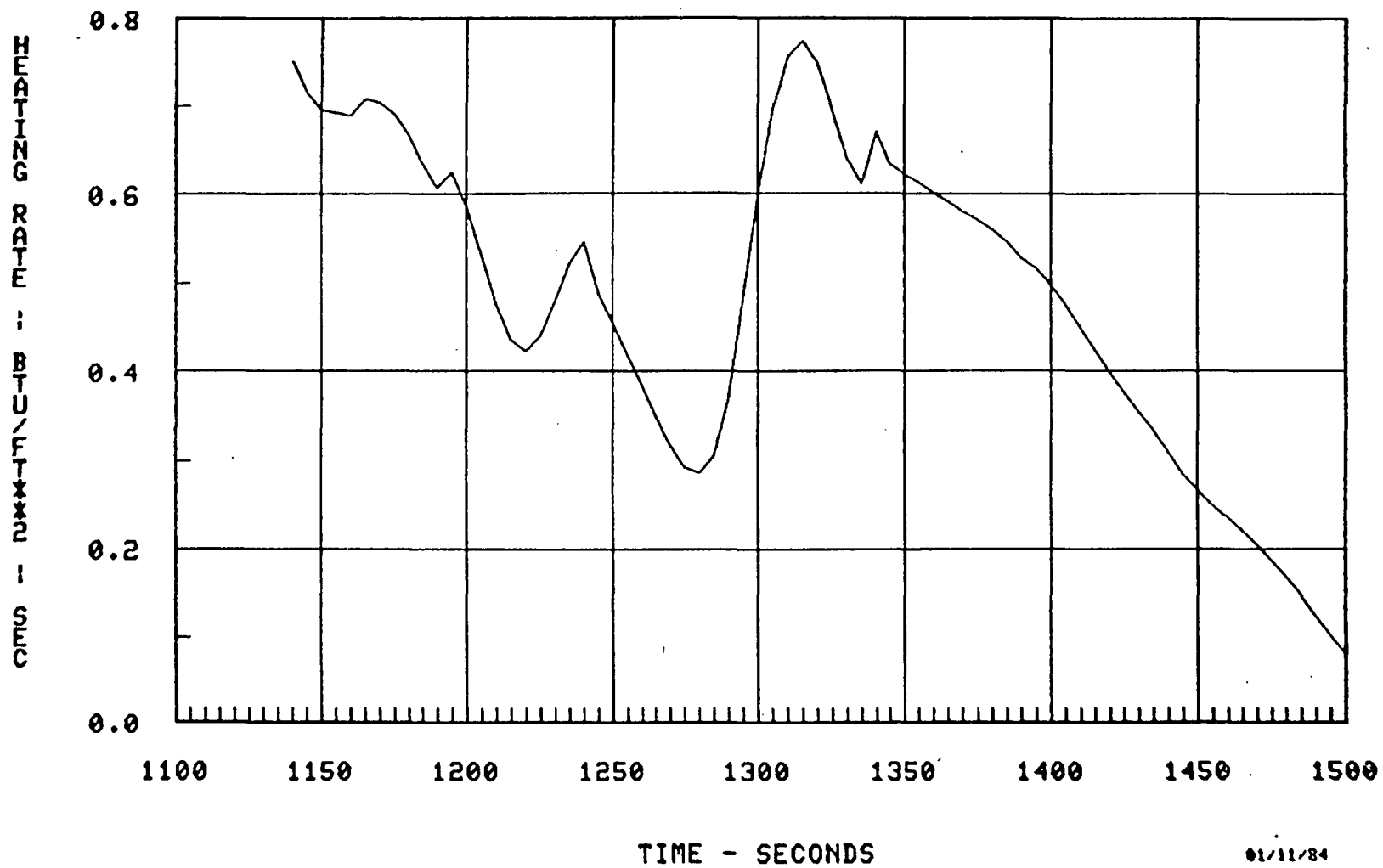
OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9916A/H-REF 150-1430 SEC



STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

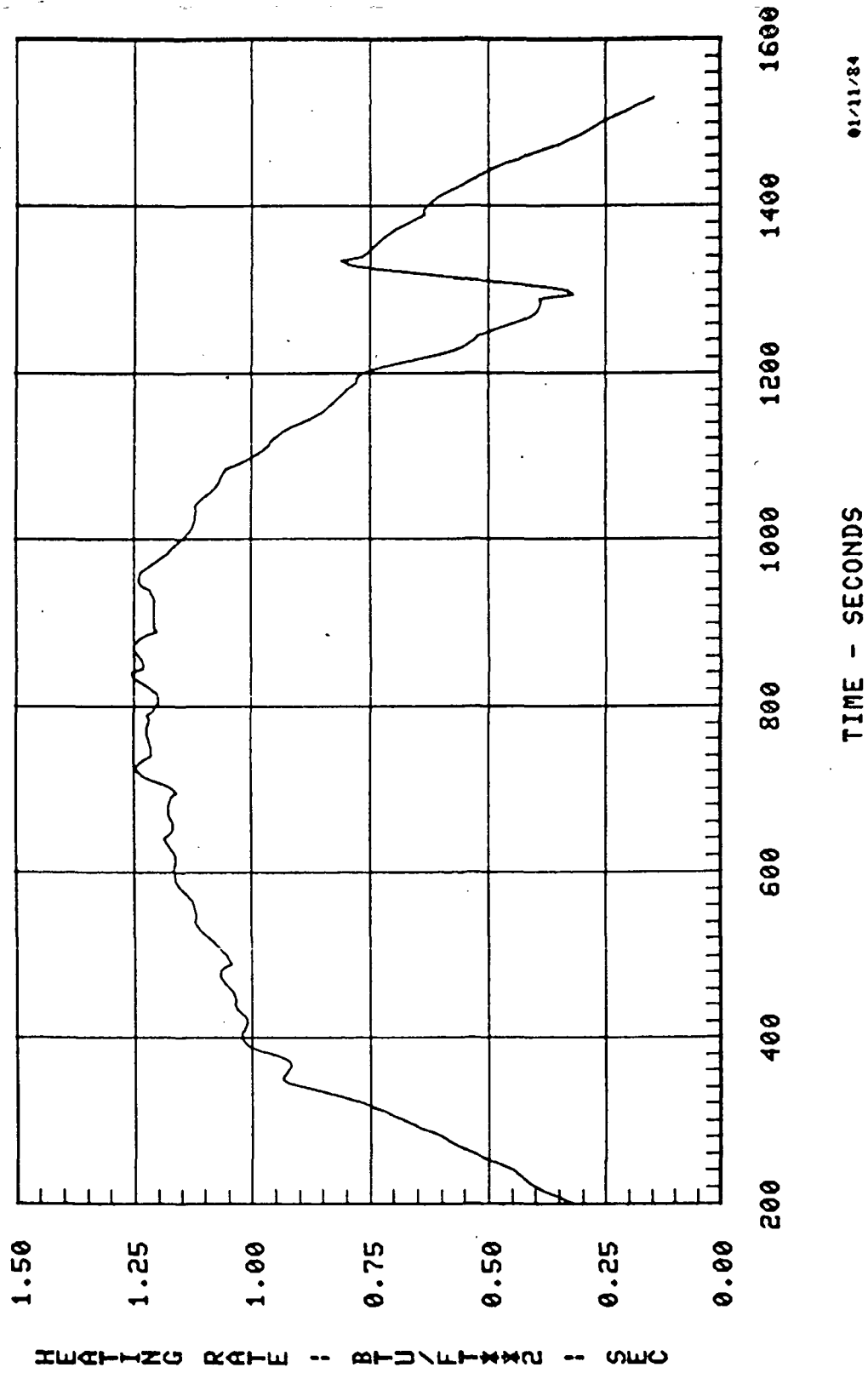
U07T9916A



B-41

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.23$ ) Z=400

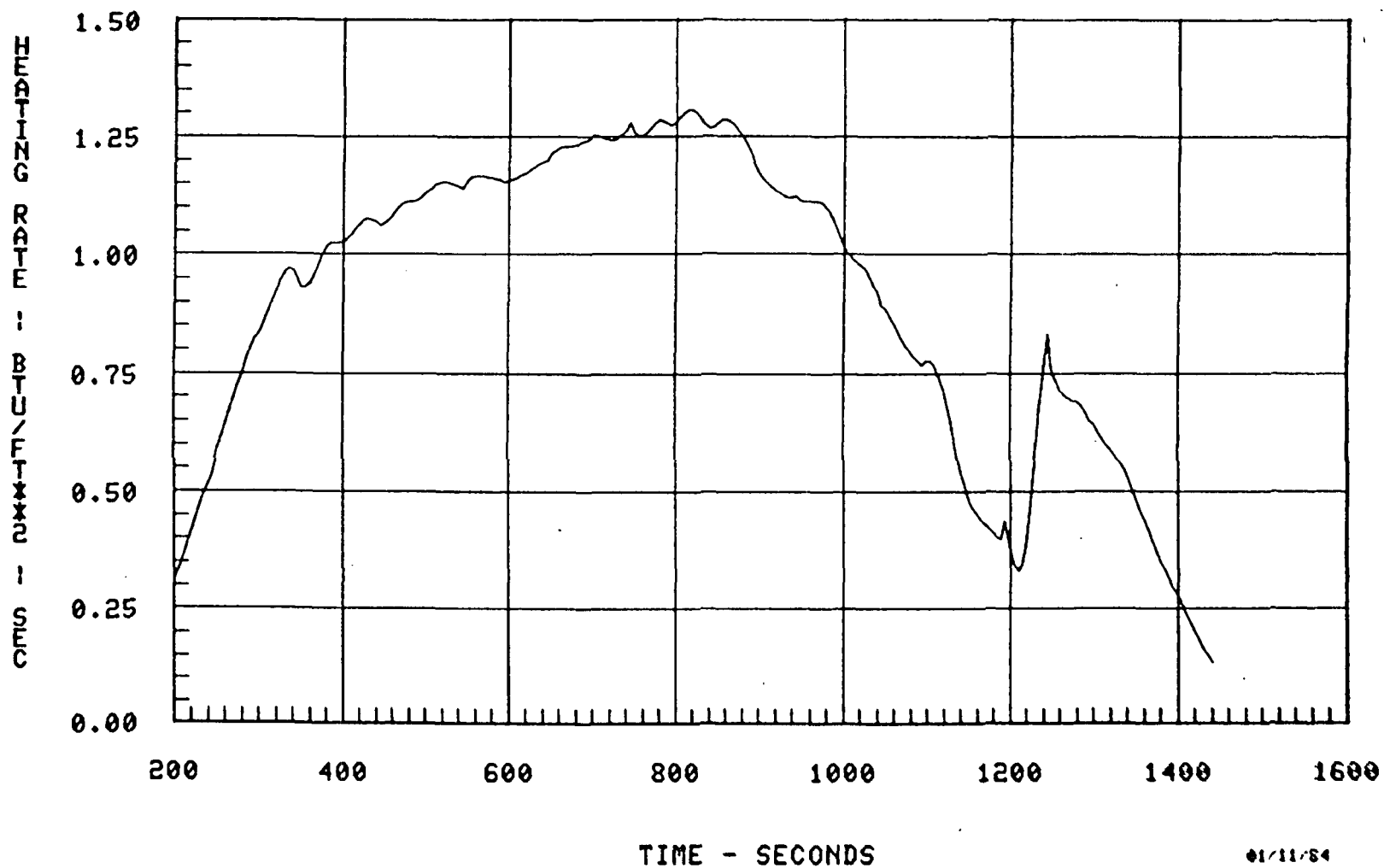
U07T9916A



01/11/84

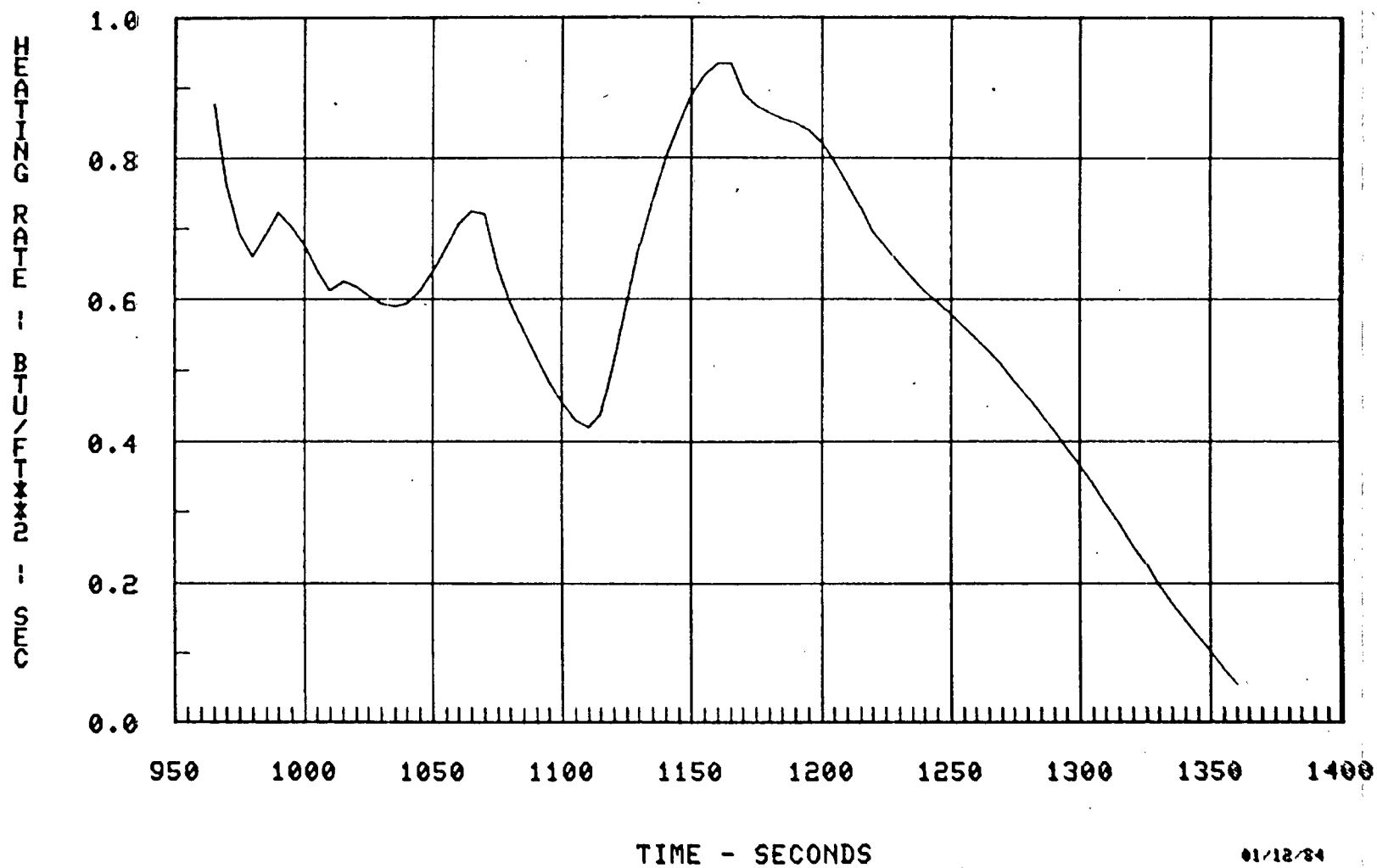
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

U07T9916A



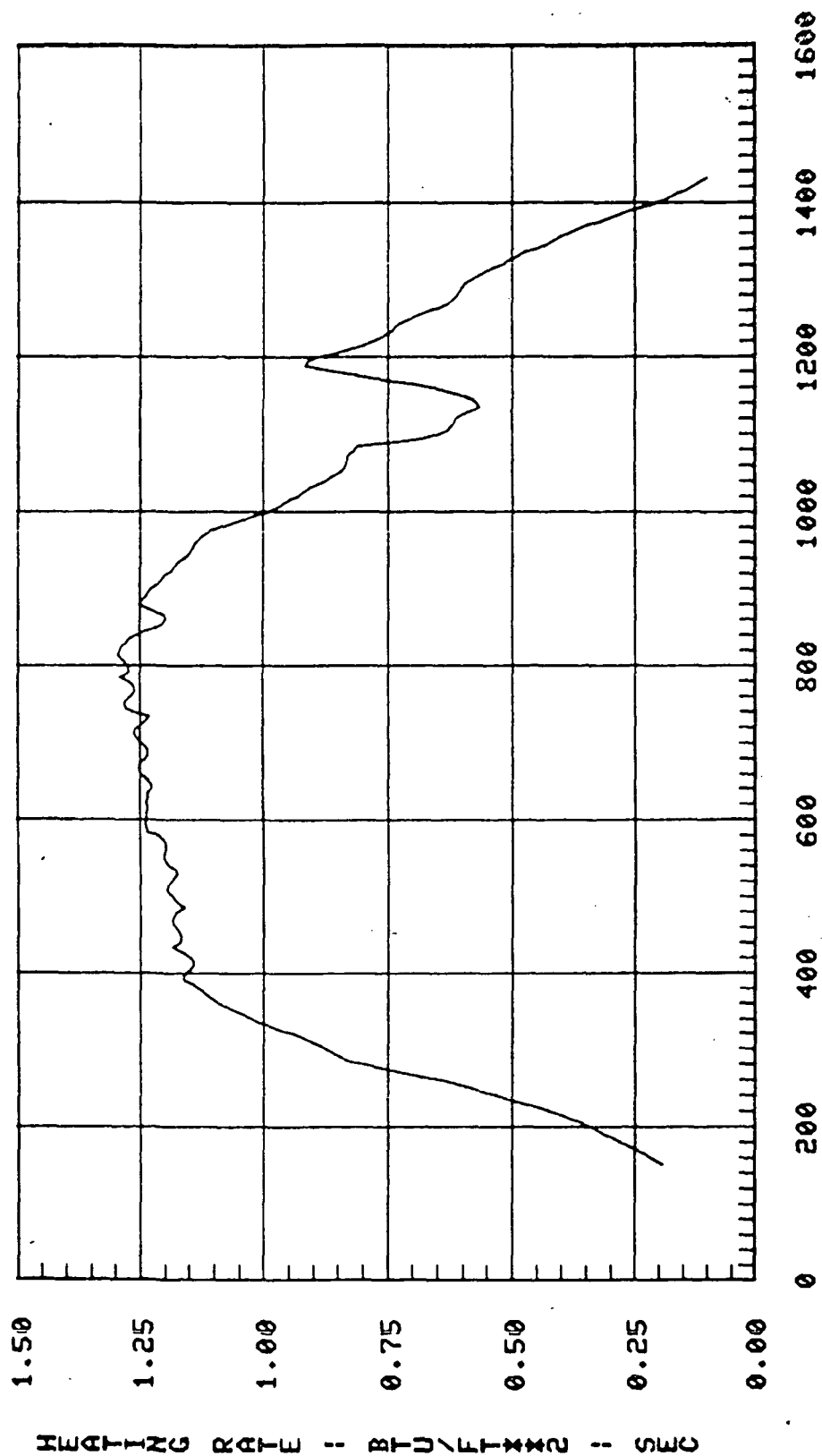
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

U07T9916A



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

U07T9916A

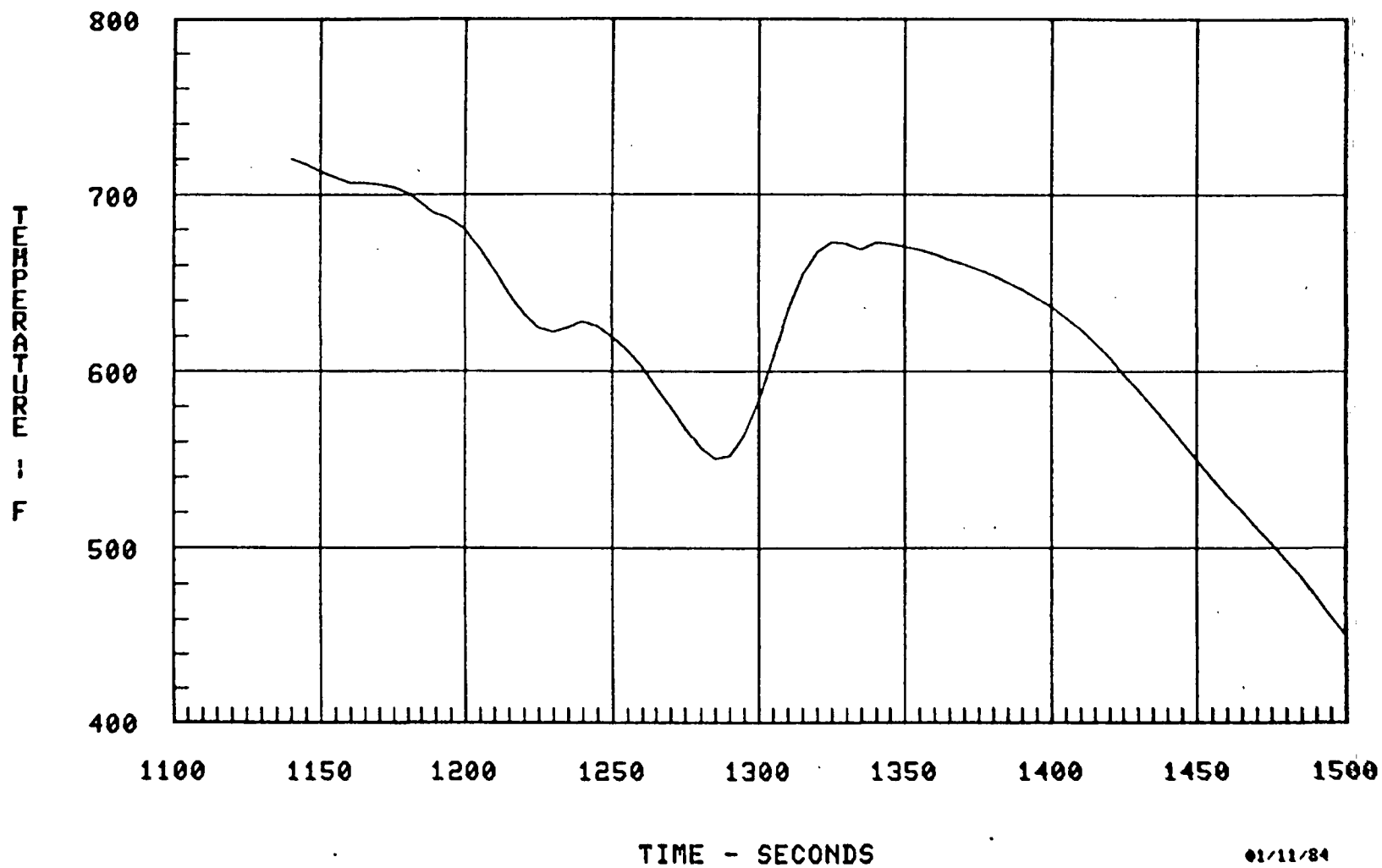


TIME - SECONDS

01/12/84

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

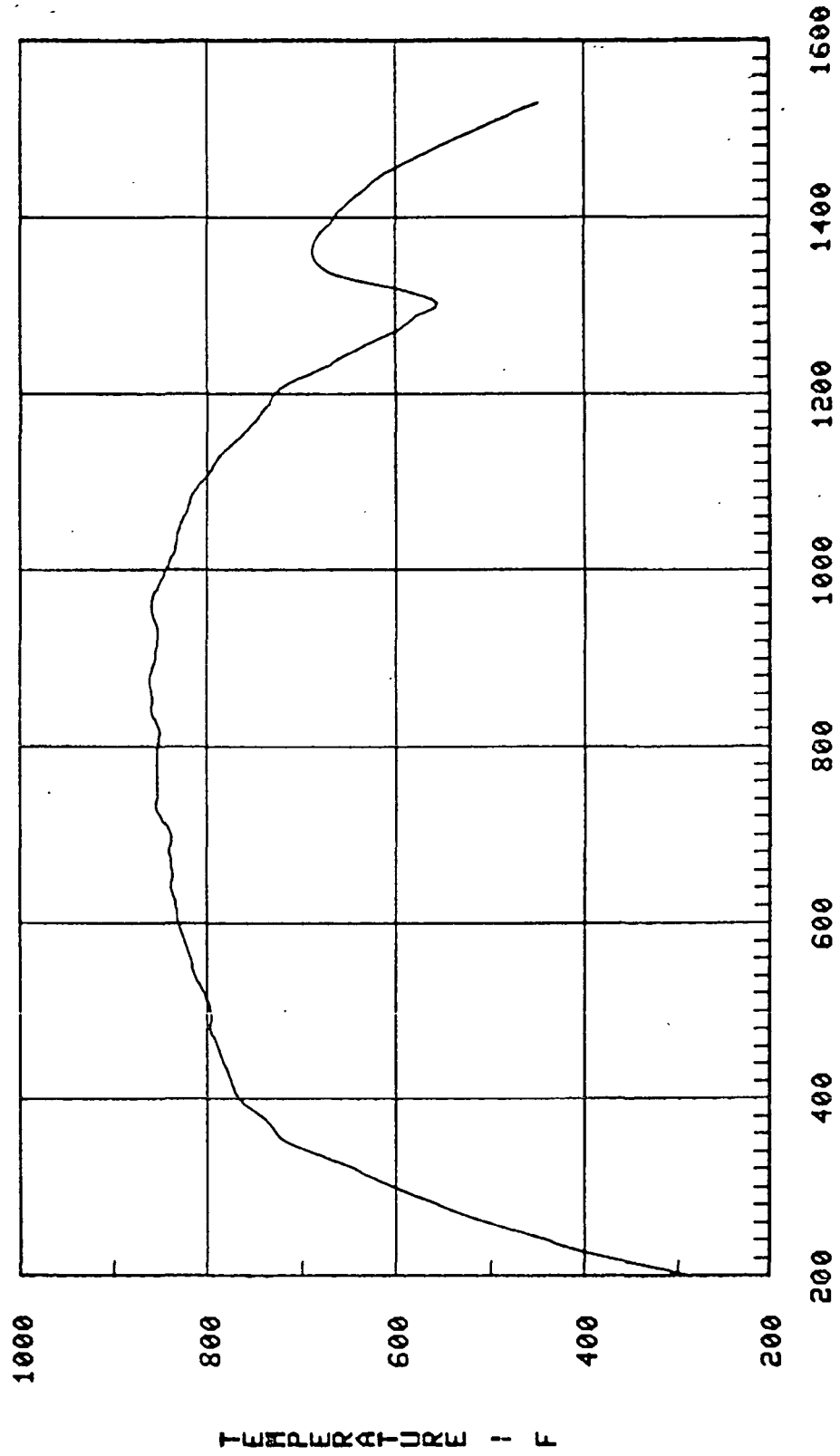
U07T9916A



01/11/84

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.23$ ) Z=400

U07T9916A



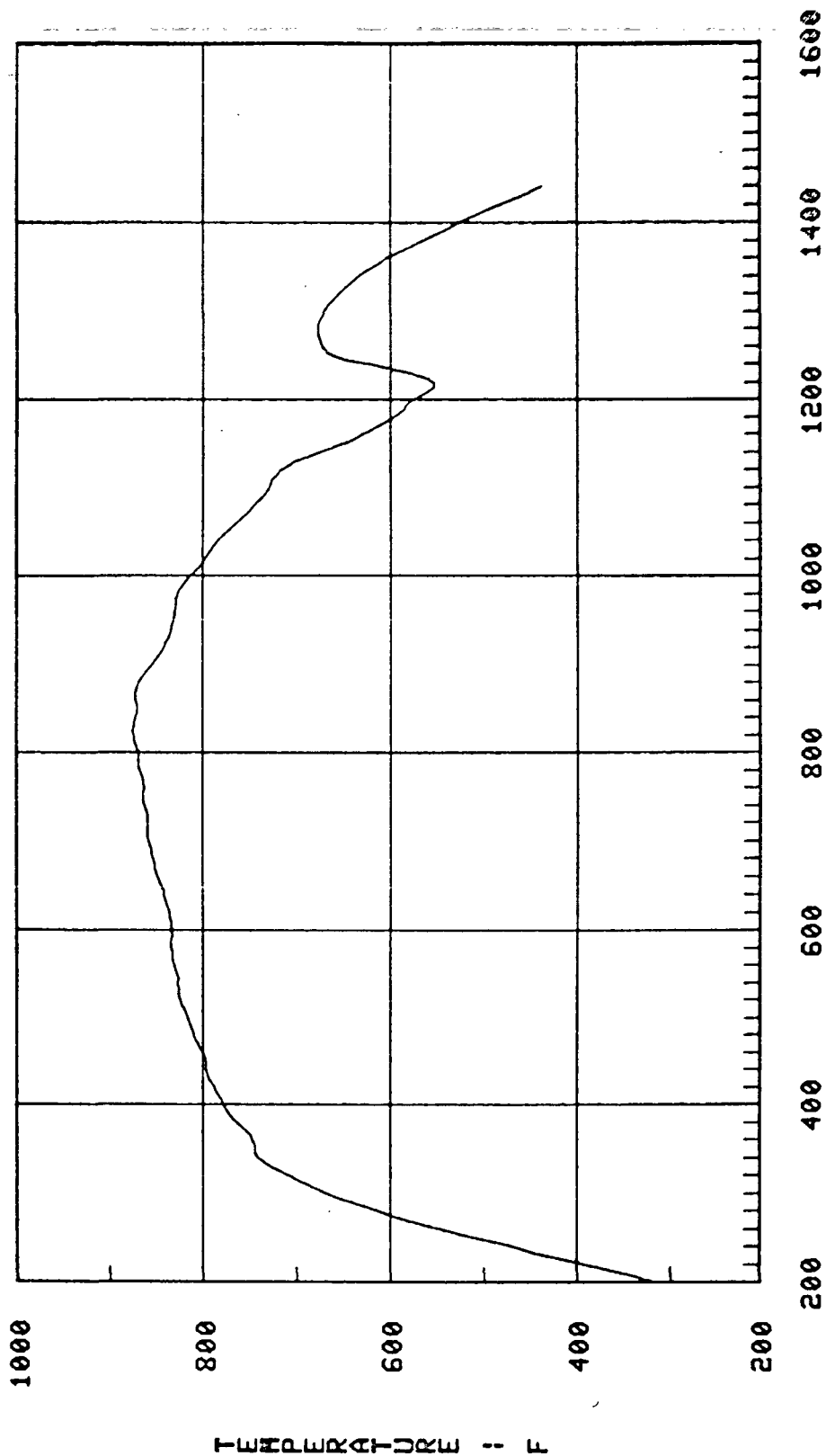
TIME - SECONDS

01/11/84



STS-3 (107 FT LENGTH SIDE FUS X/L=0.23) Z=400

U07T9916A

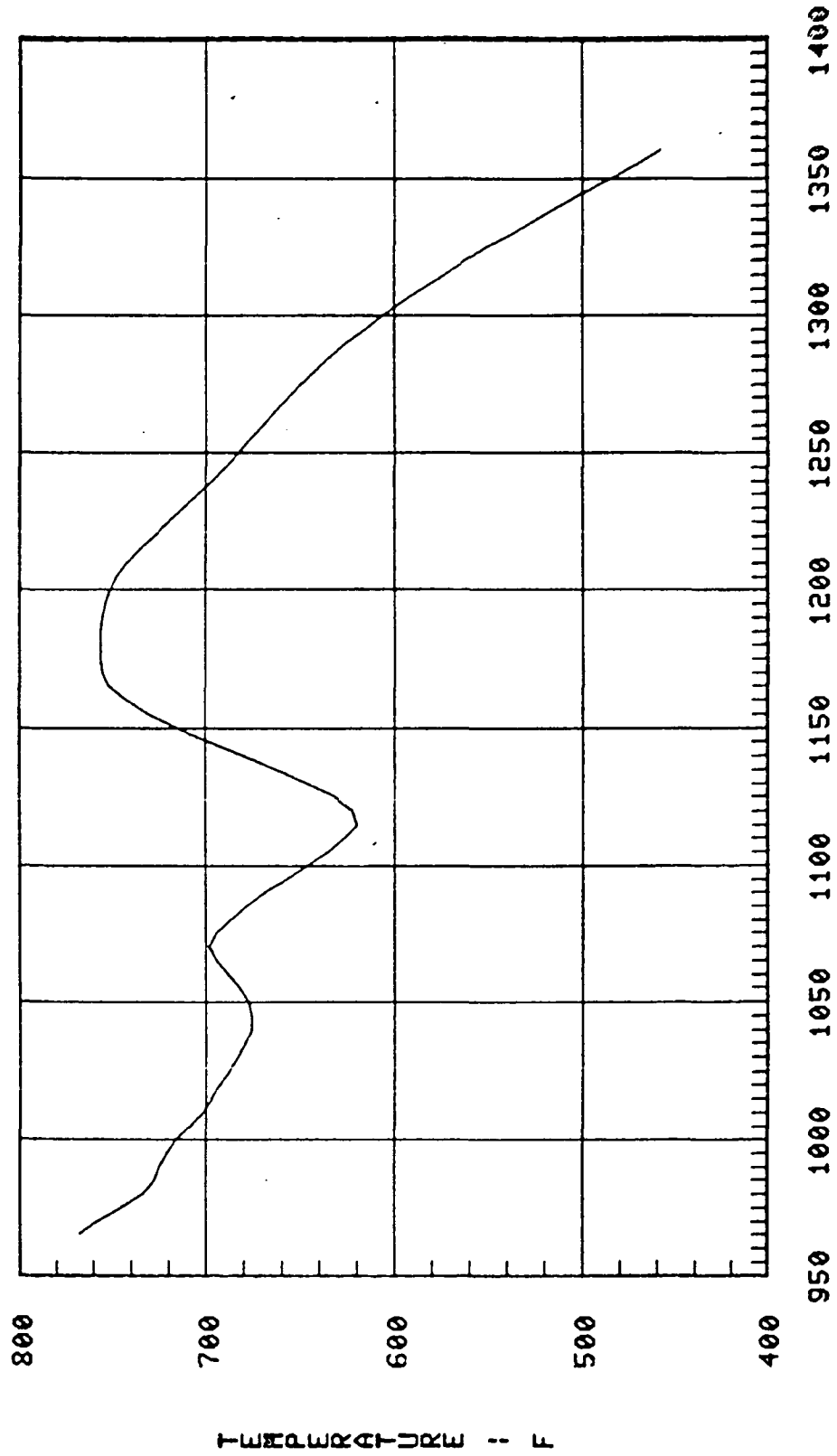


TIME - SECONDS

01/11/34

STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.23$ )  $Z=400$

U07T9916A

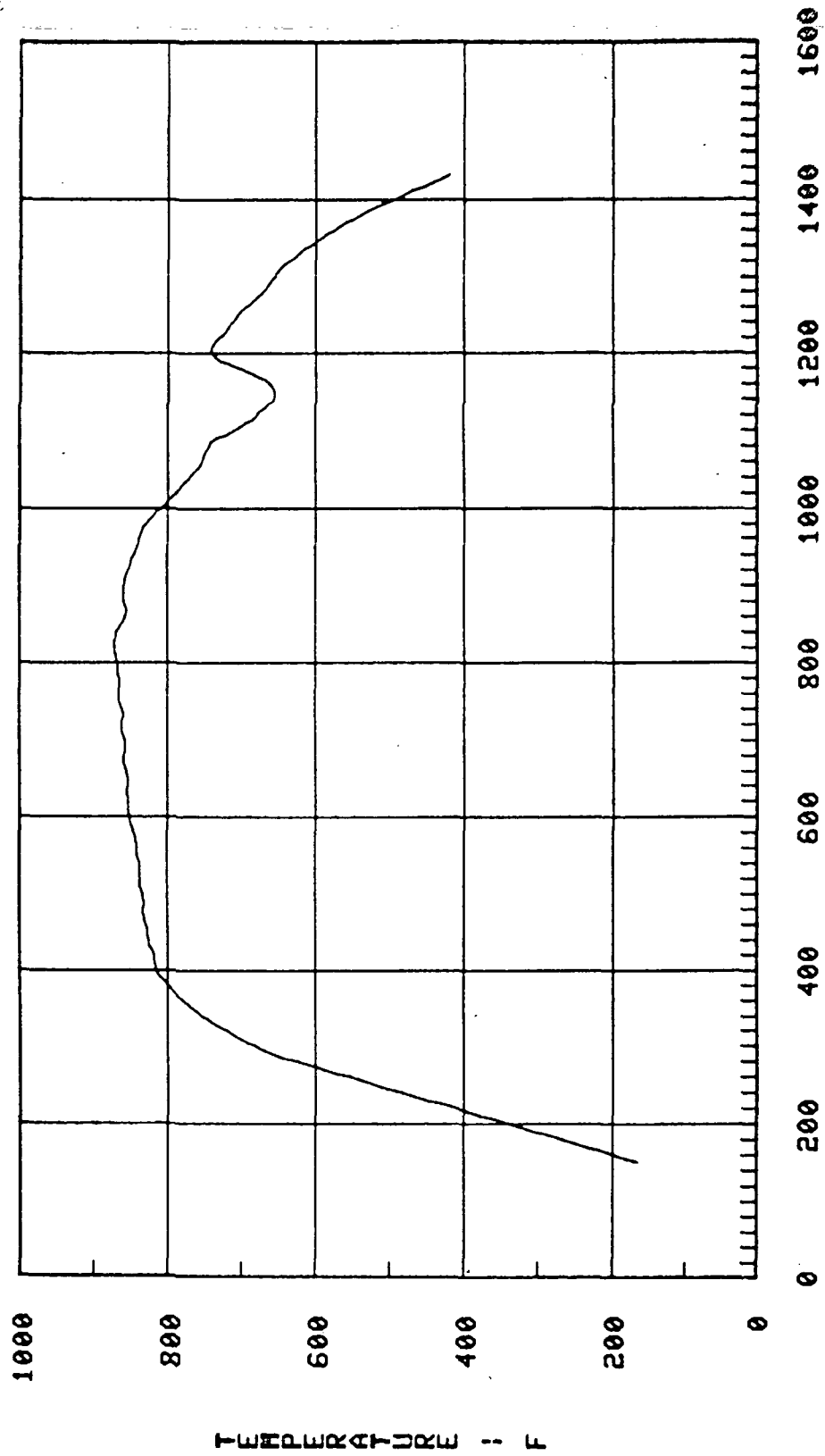


TIME - SECONDS

01/18/84

STS-5 (107 FT LENGTH SIDE FUS X/L=0.23) Z=400

U07T9916A



01/12/84

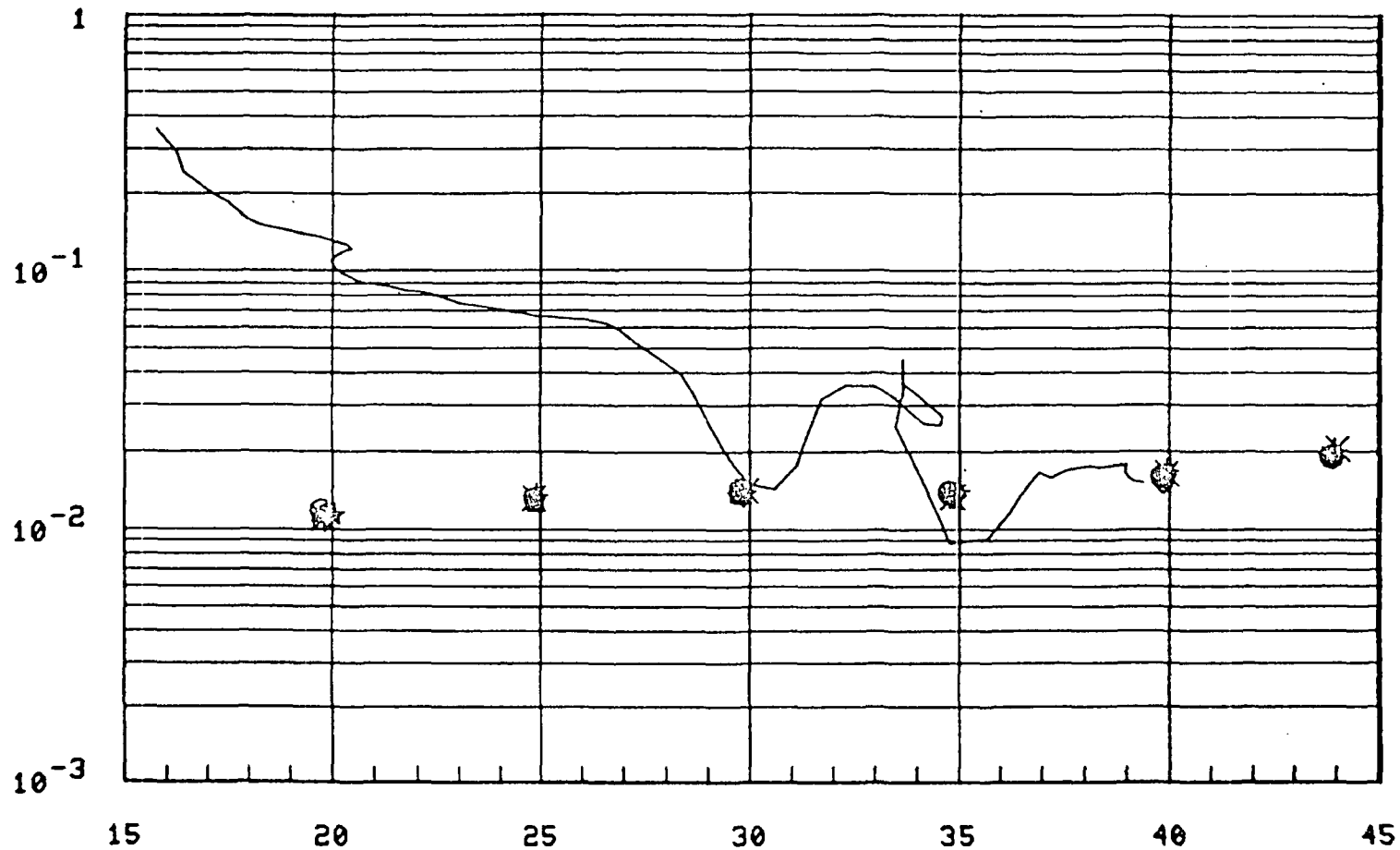
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

○  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U07T9893A/H-REF 1065-1500 SEC

FILE CODE: H/H-REF



ANGLE-OF-ATTACK - DEG

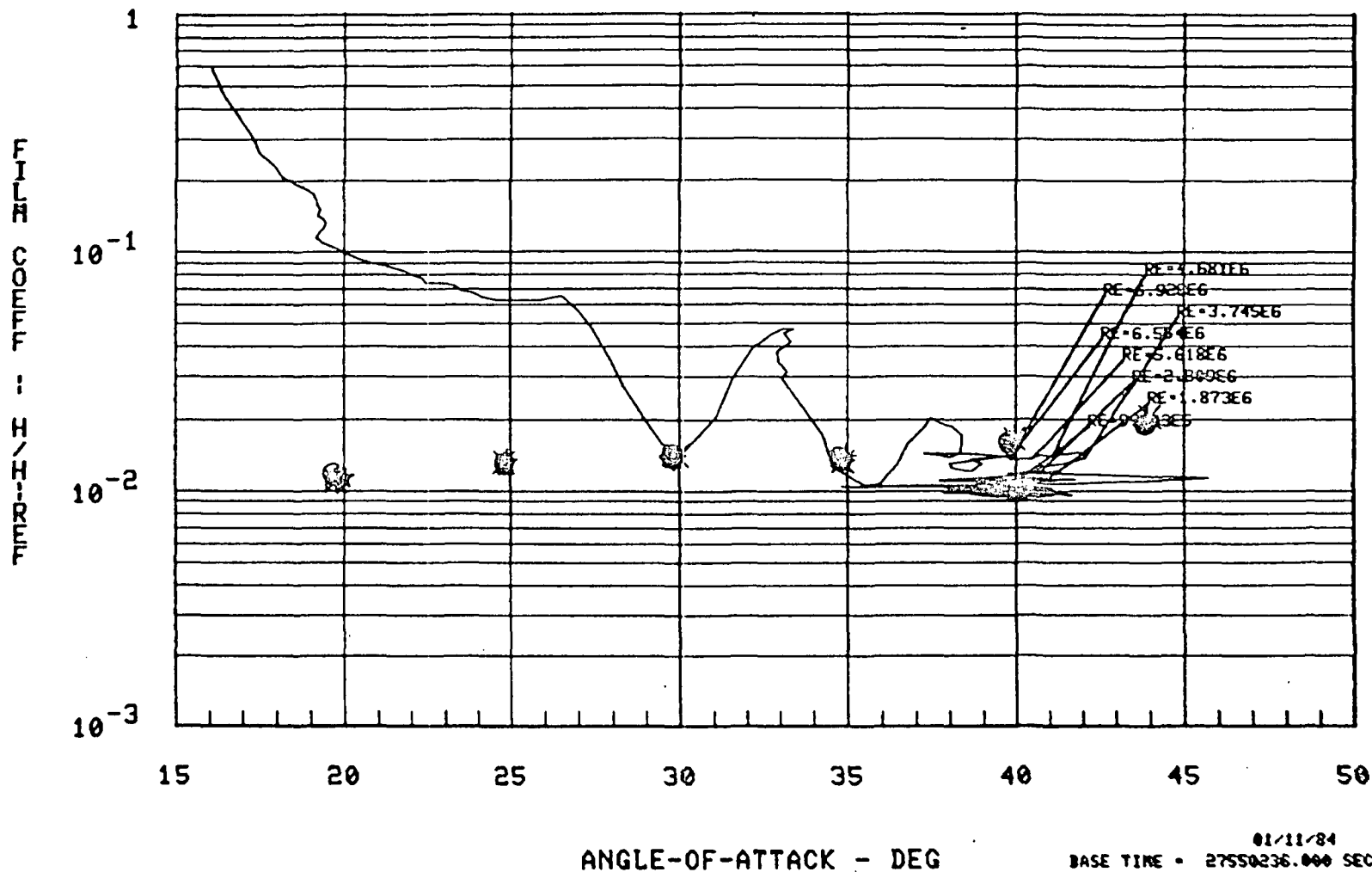
01/11/84  
BASE TIME • 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

DATA

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9893A/H-REF 200-1530 SEC



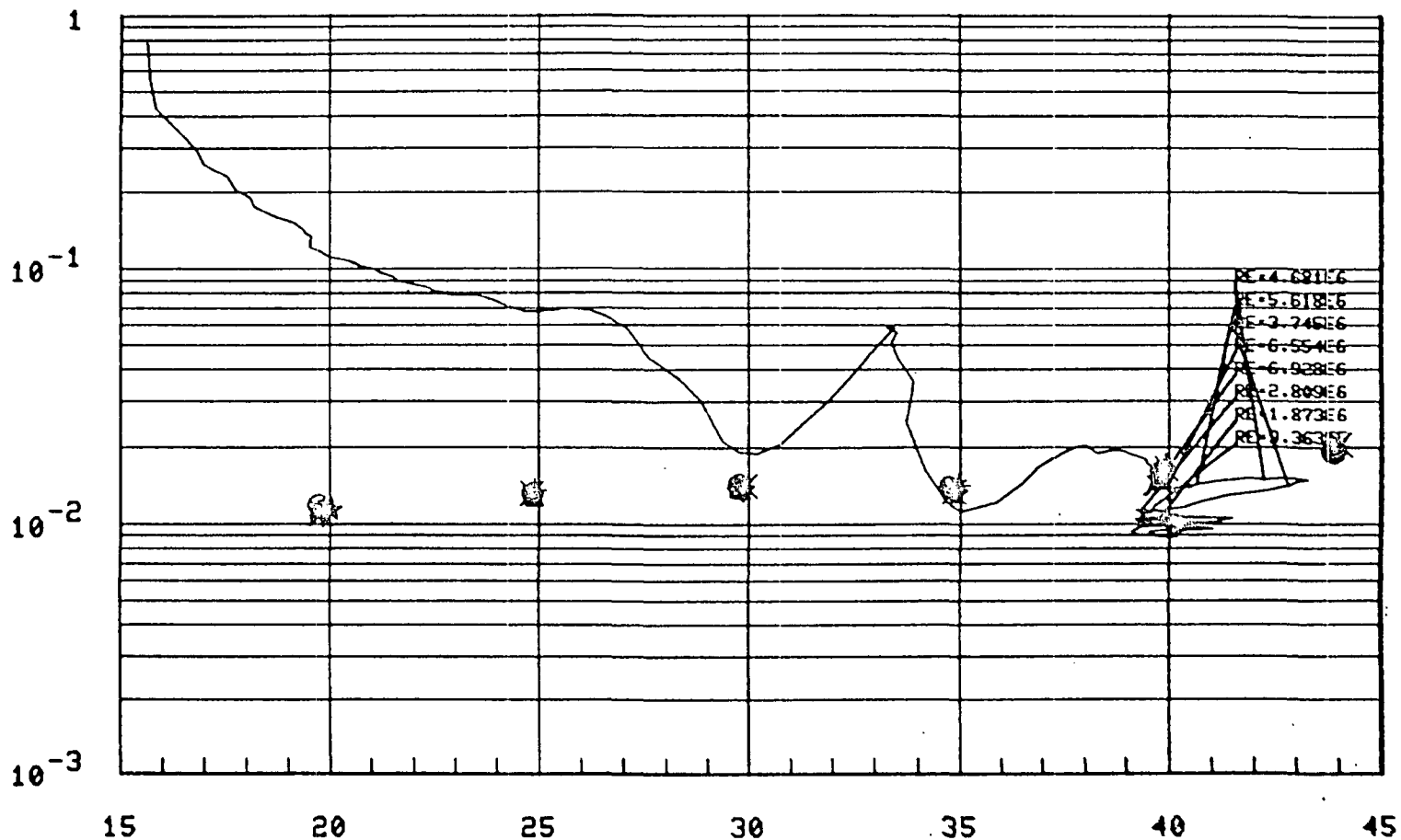
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

○  
□  
◇  
▽  
△  
★  
+  
×

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9893A/H-REF 200-1440 SEC

LINE CODE - H/H-REF



ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 077456S4.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS X/L=0.30) Z=400

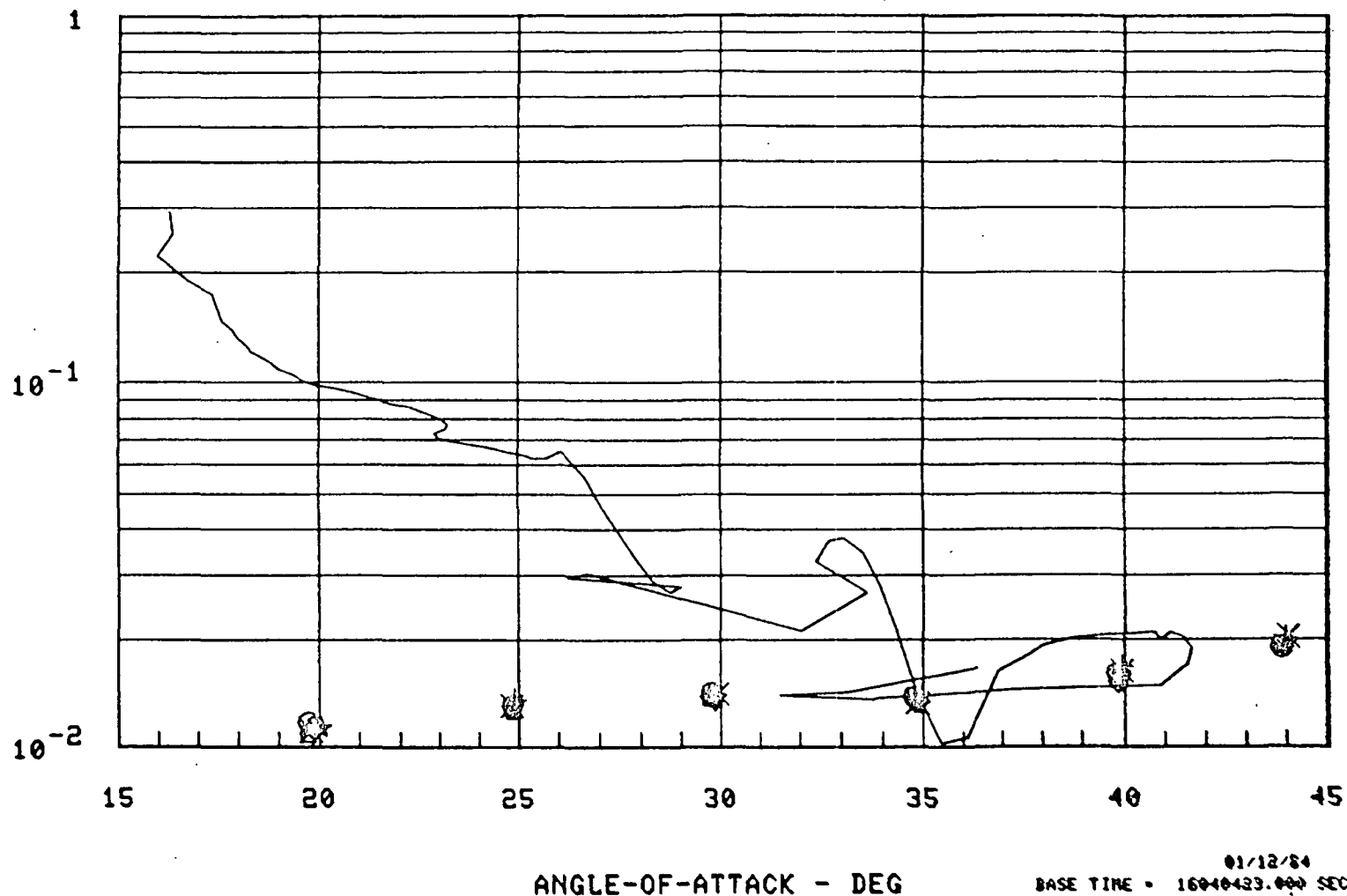
○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9893A/H-REF 965-1360 SEC

FILE CODE - H/H-REF

B-54

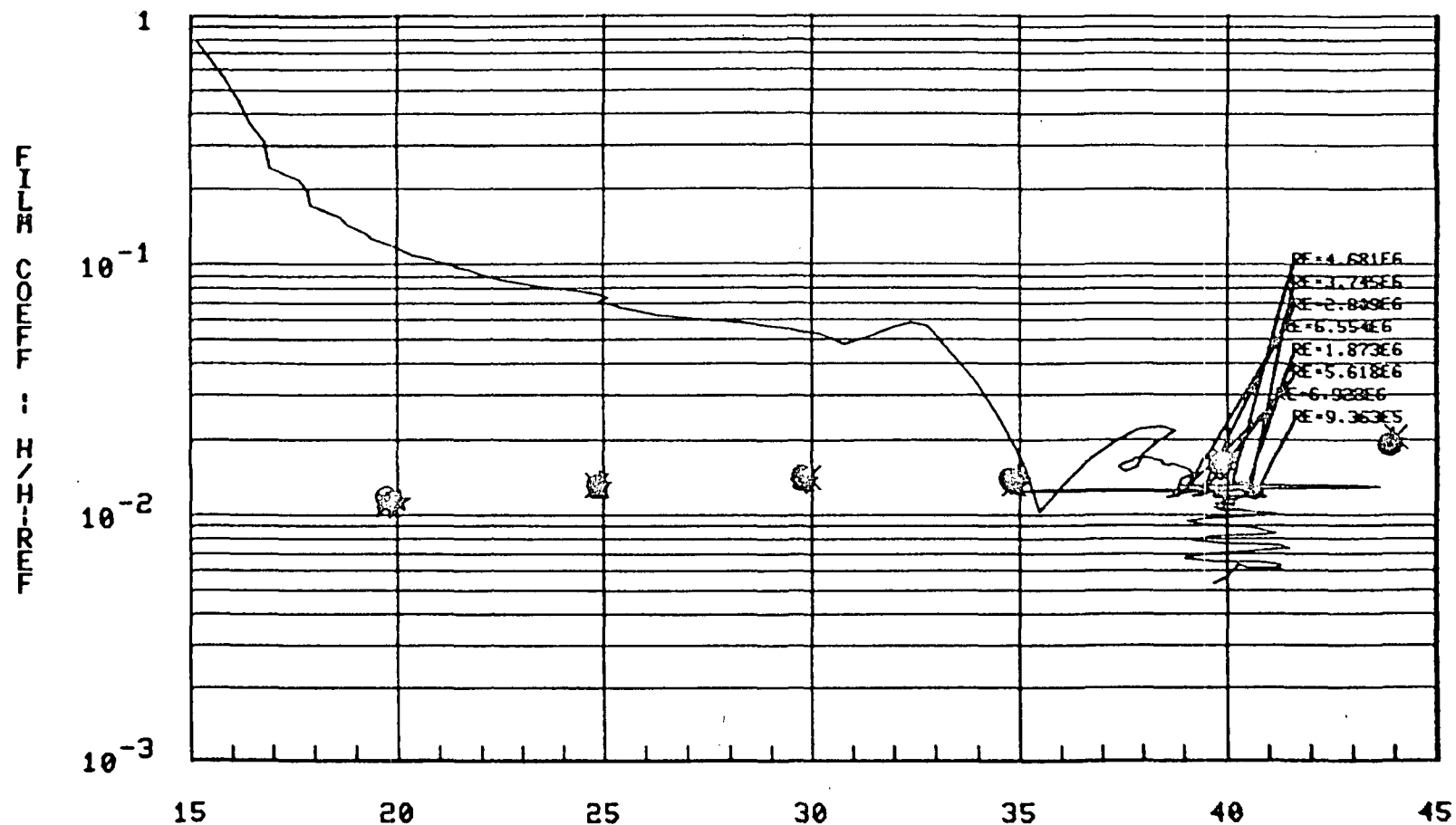


# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

○  
◇  
△  
▽  
△  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9893A/H-REF 150-1430 SEC



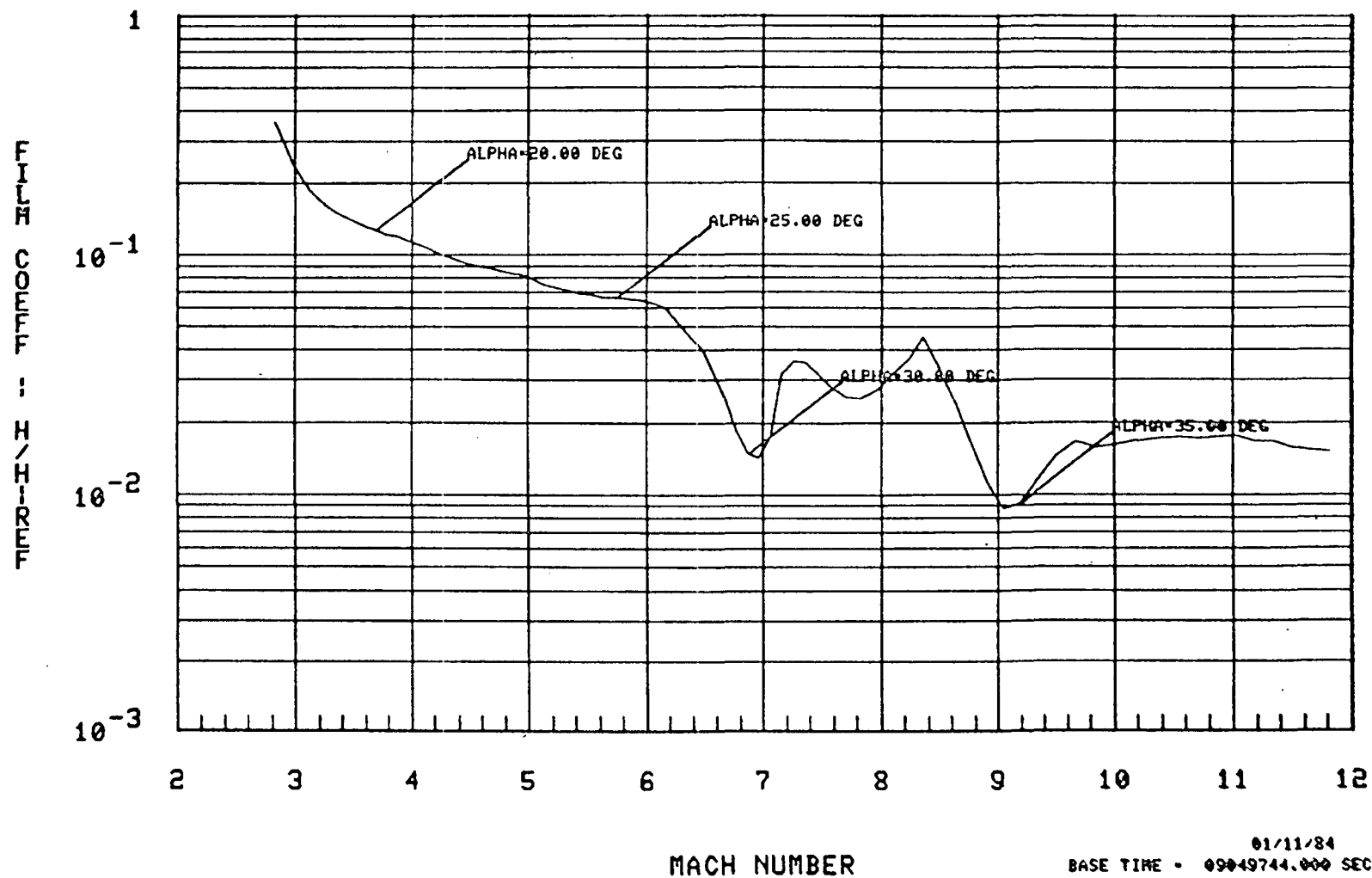
ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.



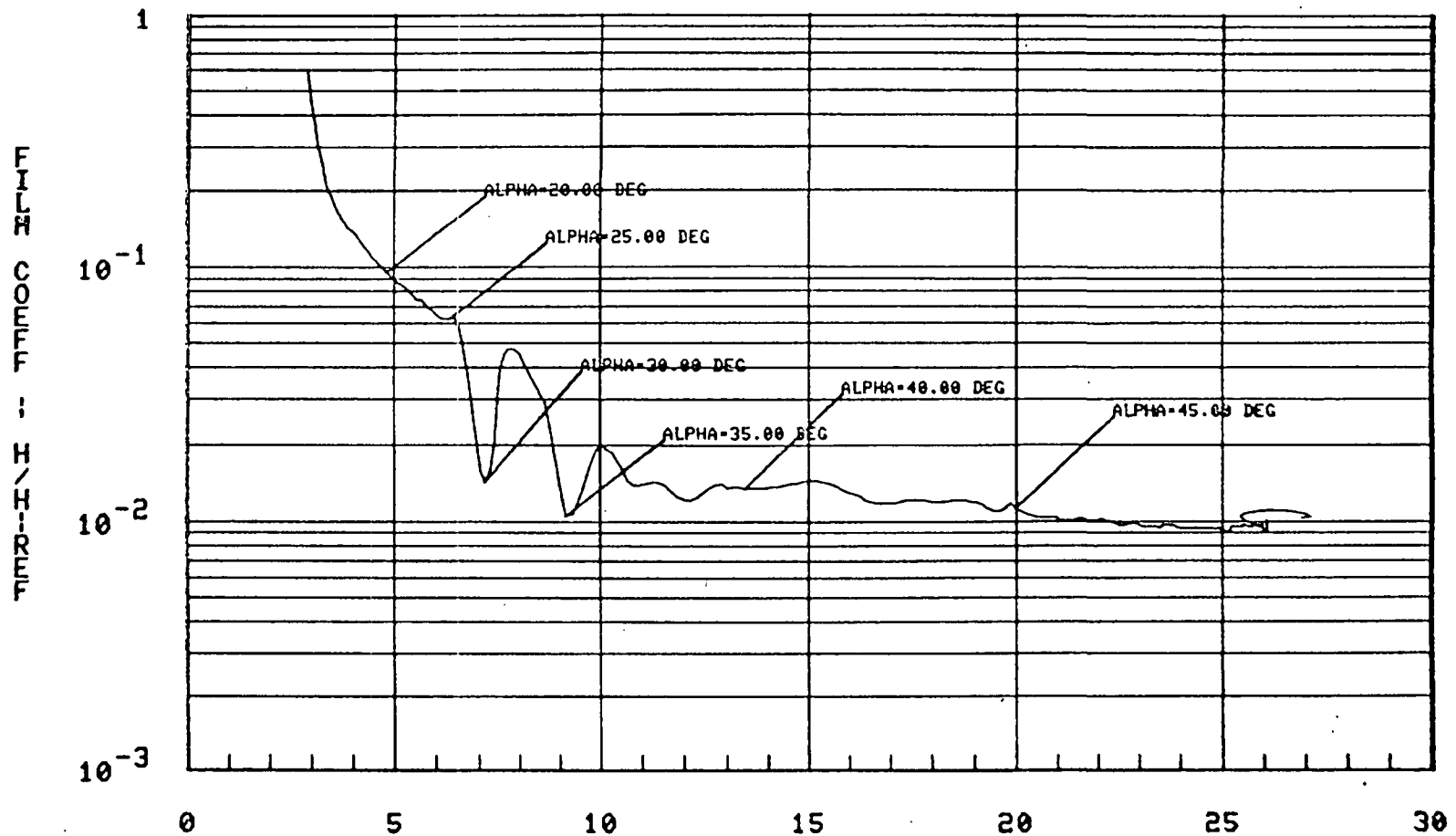
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

U07T9893A/H-REF 1065-1500 SEC



# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

U07T9893A/H-REF 200-1530 SEC



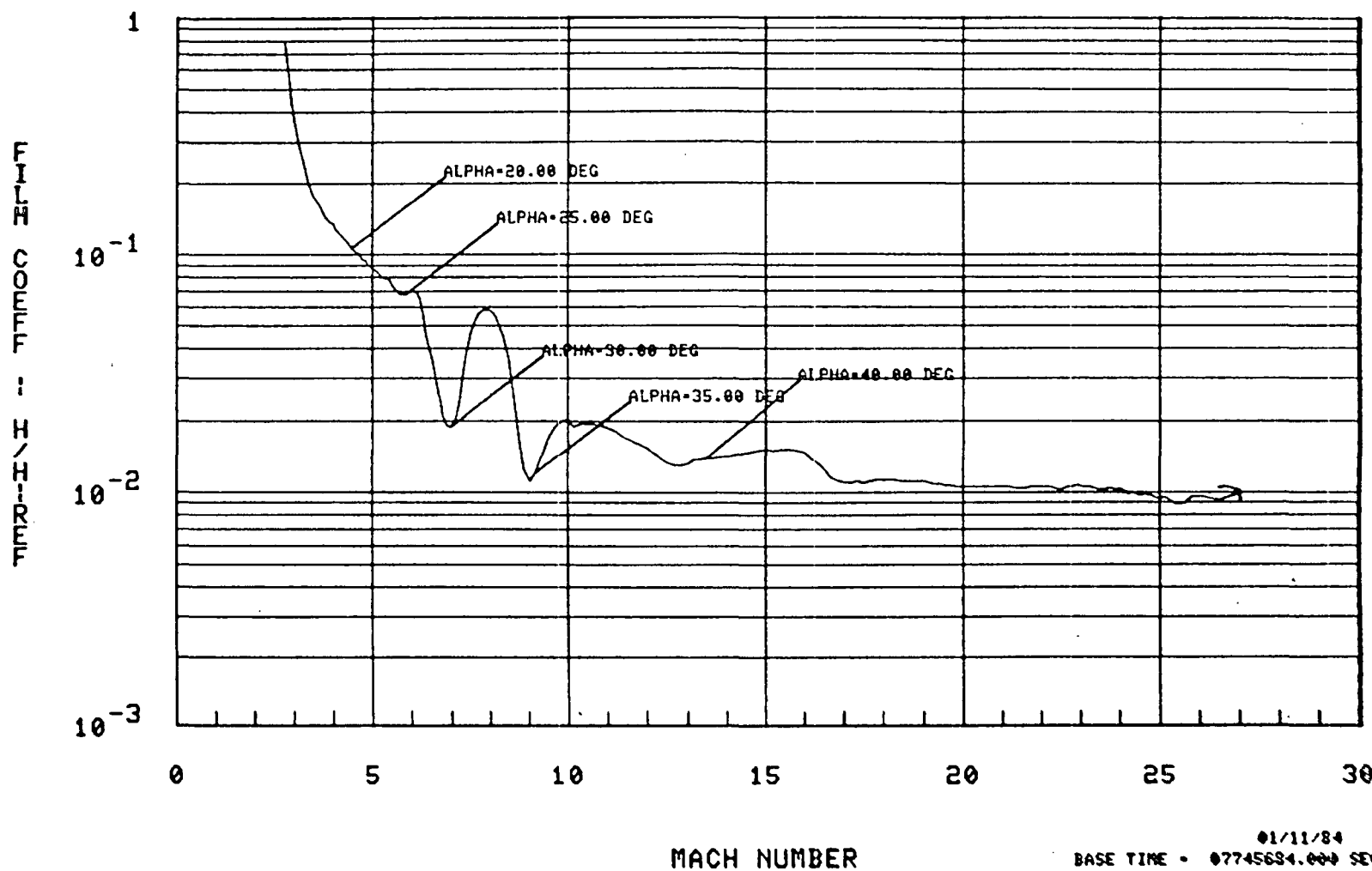
B-57

MACH NUMBER

01/11/84  
BASE TIME • 27550236.000 SEC.

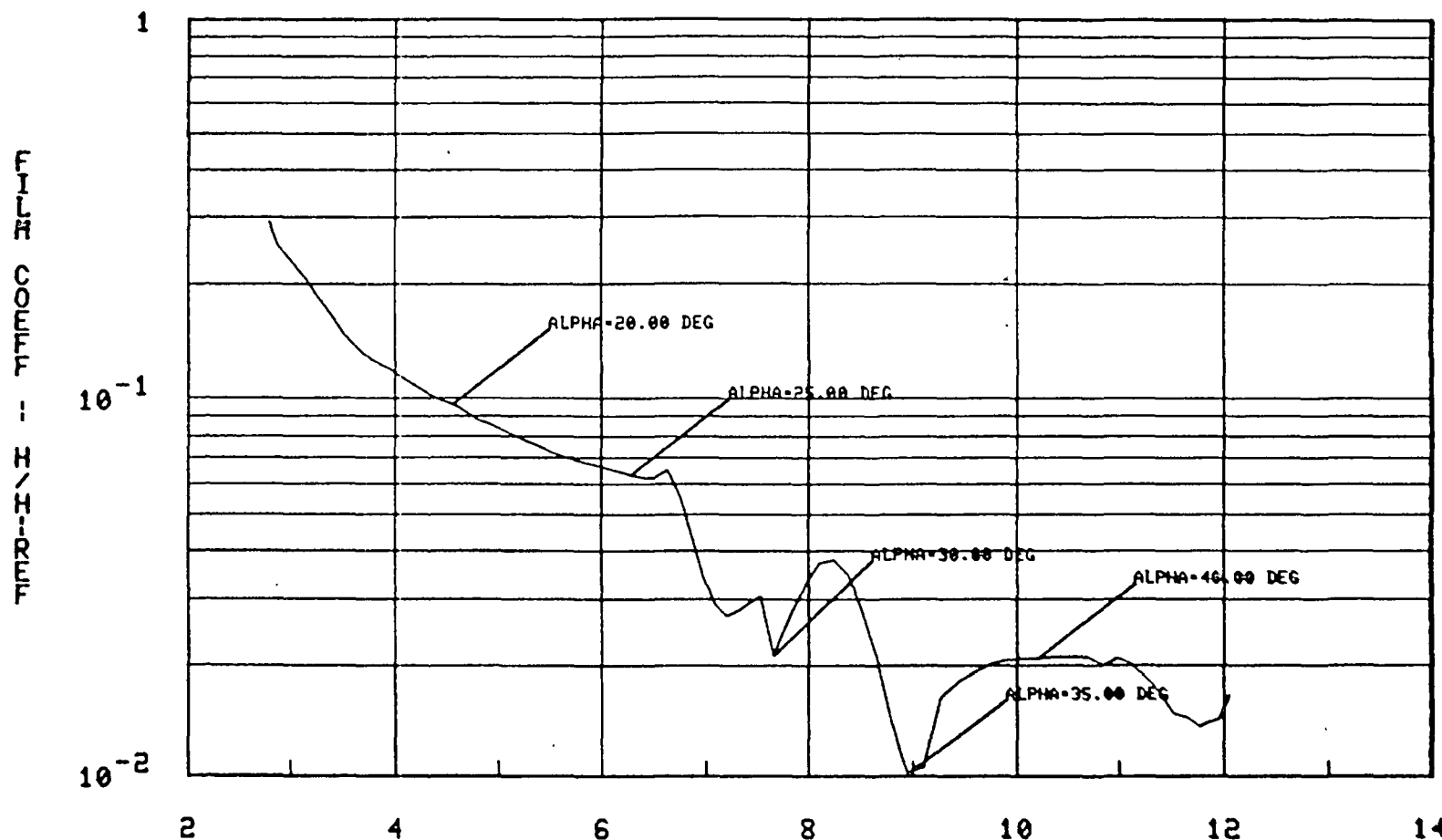
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

U07T9893A/H-REF 200-1440 SEC



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A/H-REF 965-1360 SEC

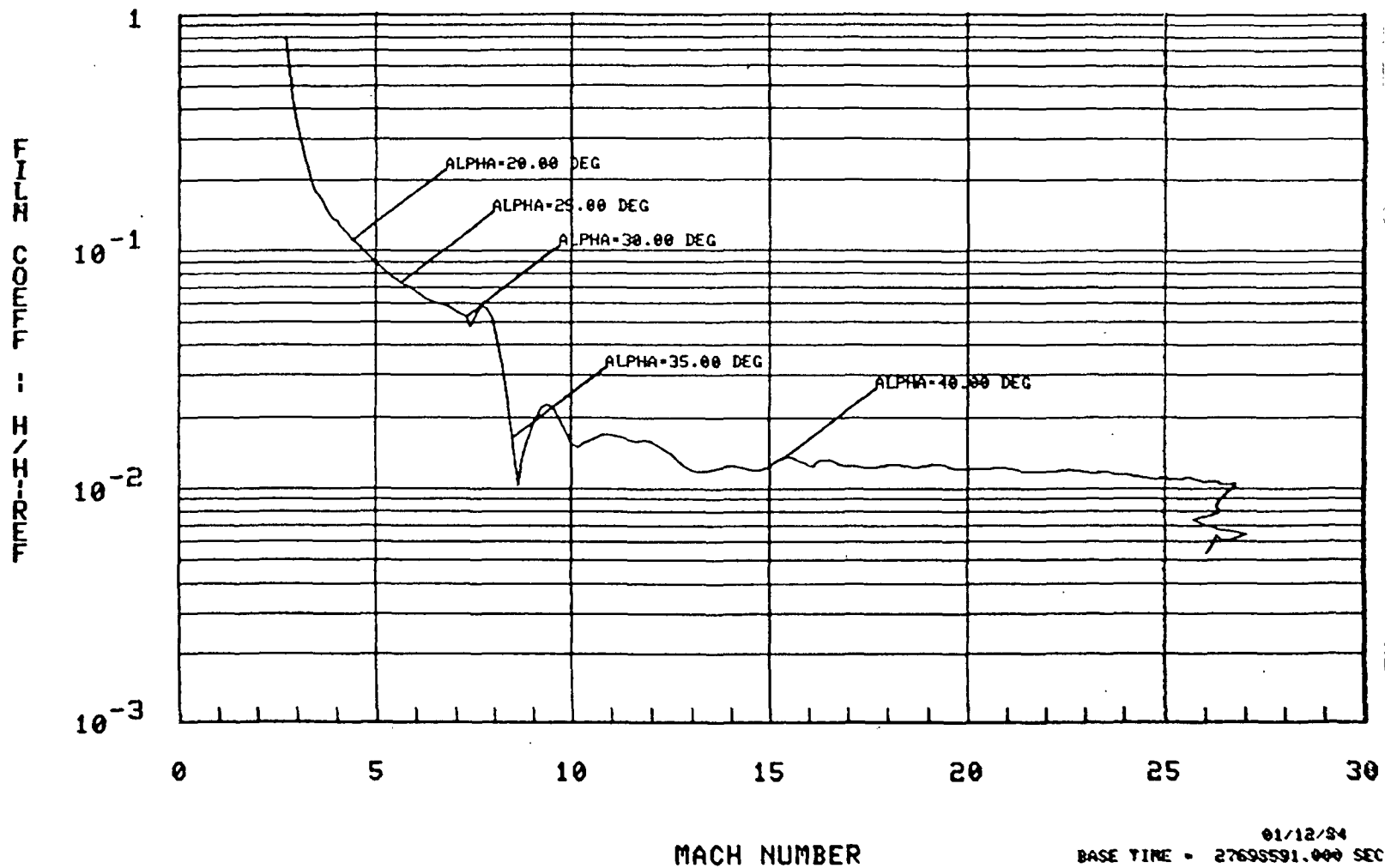


MACH NUMBER

01/12/84  
BASE TIME = 16040423.000 SEC.

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A/H-REF 150-1430 SEC



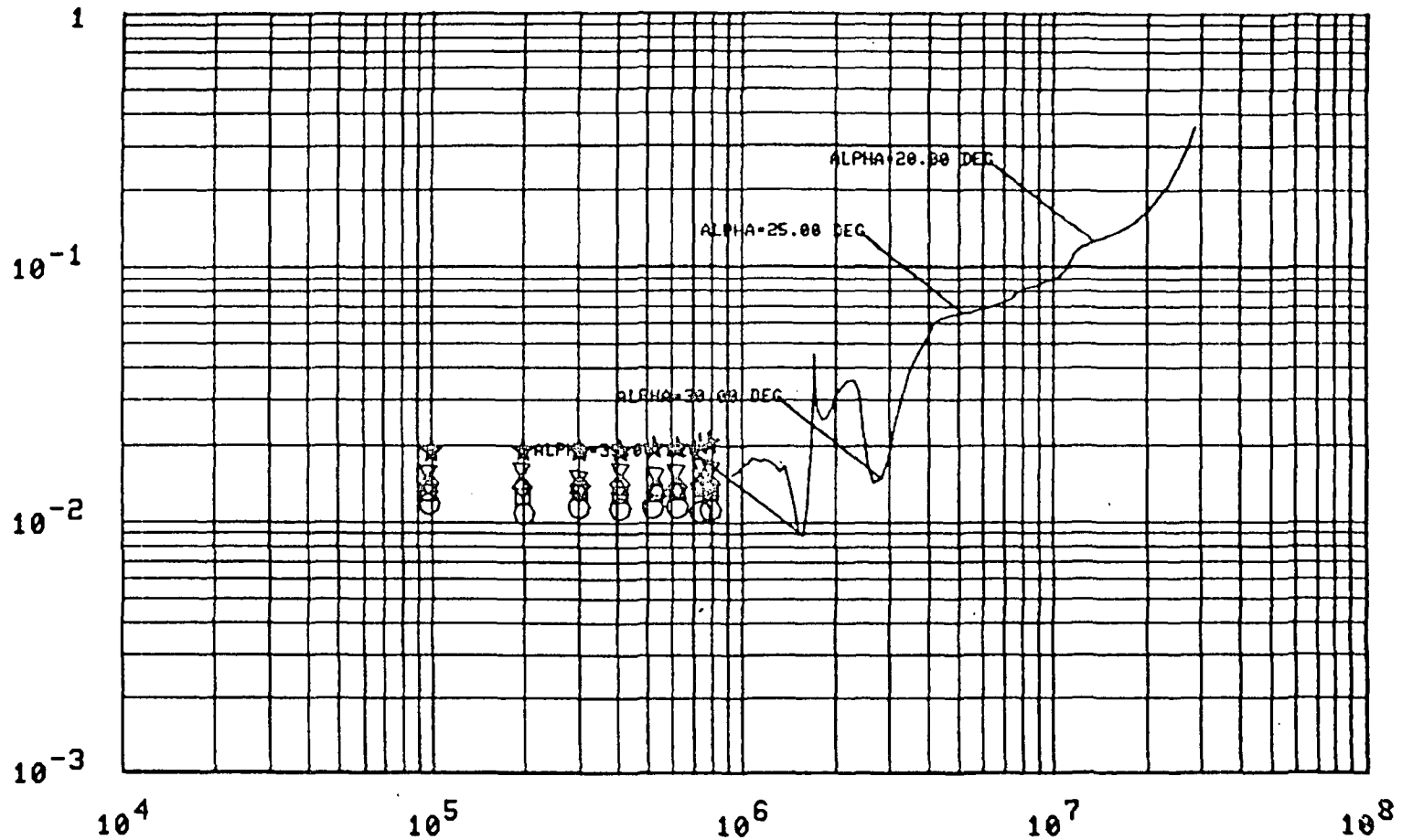
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9893A/H-REF 1065-1500 SEC

FILE COUNT - H-I-REF



REYNOLDS NUMBER (NS)

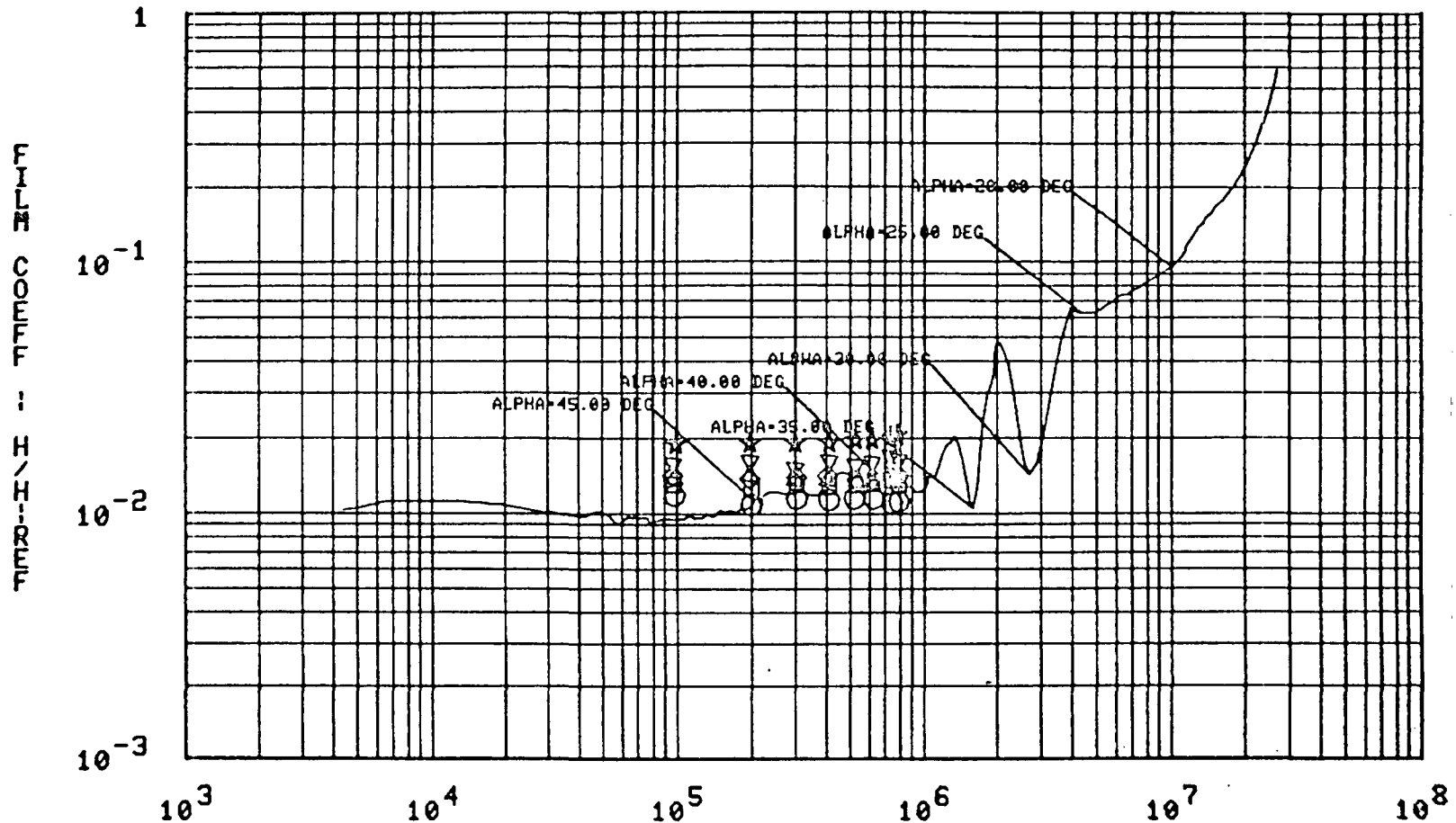
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9893A/H-REF 200-1530 SEC



B-62

REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 27550236.000 SEC.

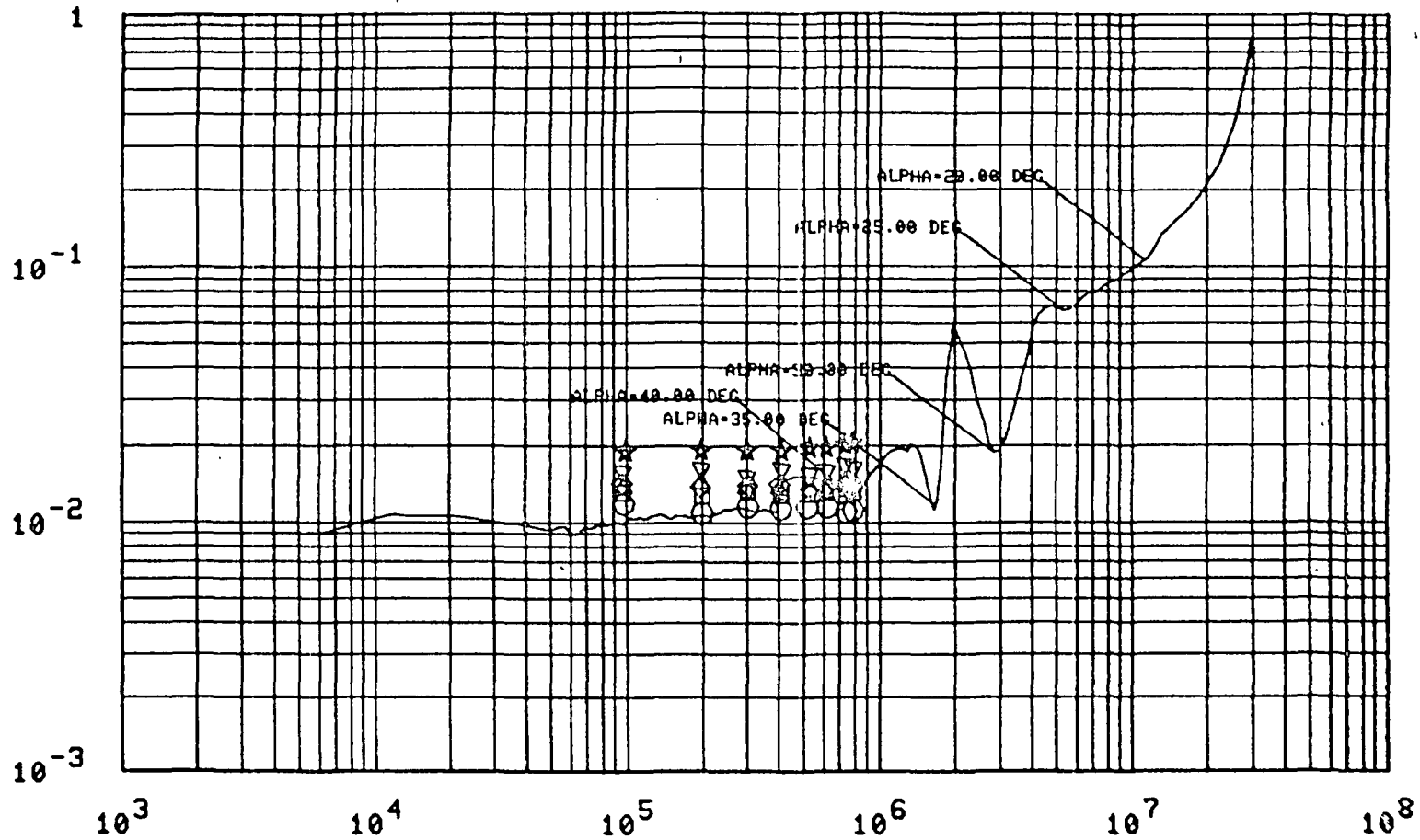
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

□  
◇  
△  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9893A/H-REF 200-1440 SEC

FILM COEFF. - H/H-REF



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 07745634.040 SEC.



# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

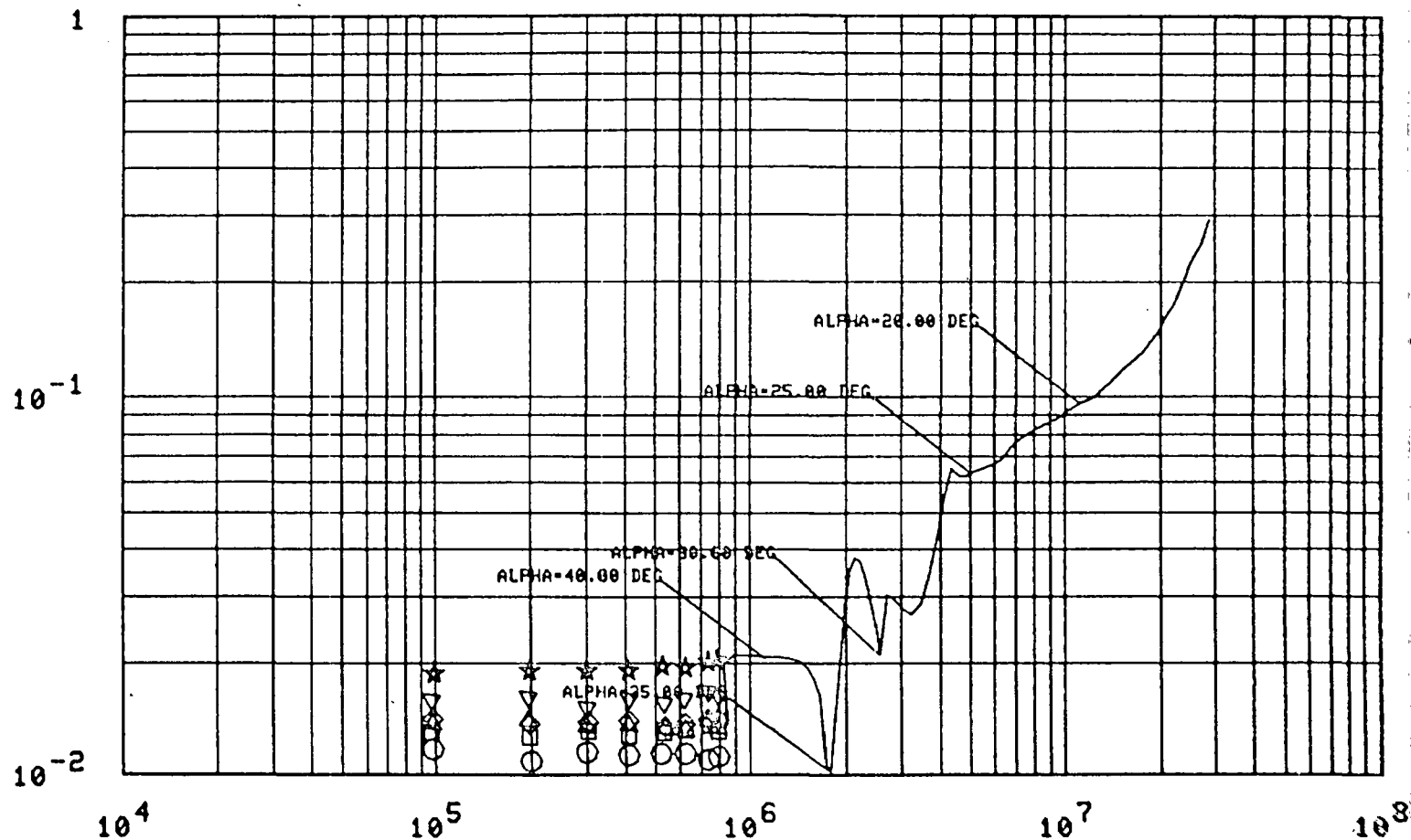
○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9893A/H-REF 965-1360 SEC

FILM COEFF. - H/H-REF

B-64



REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 16040423.000 SEC.

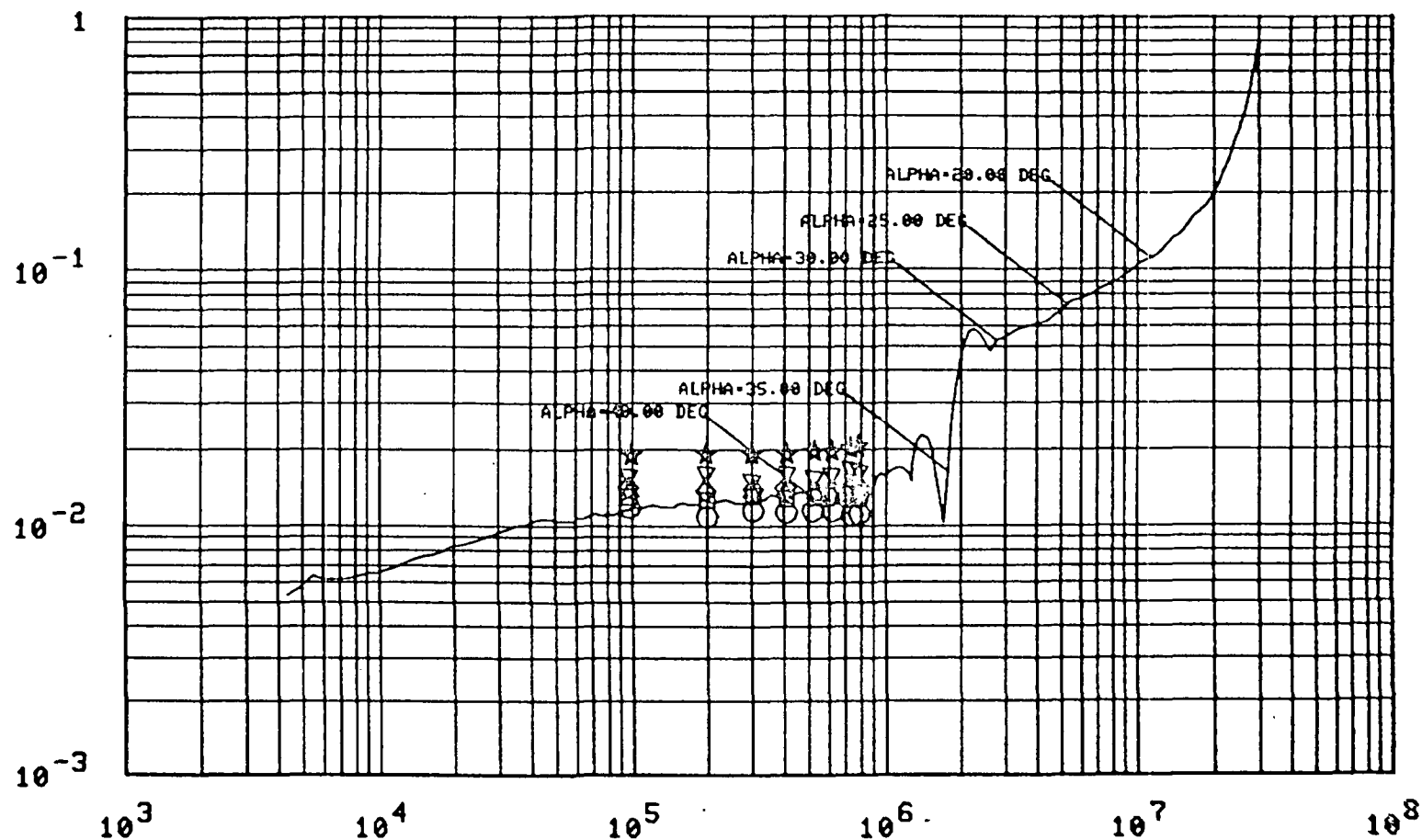
# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.30$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9893A/H-REF 150-1430 SEC

FILE CODE : H/H-REF

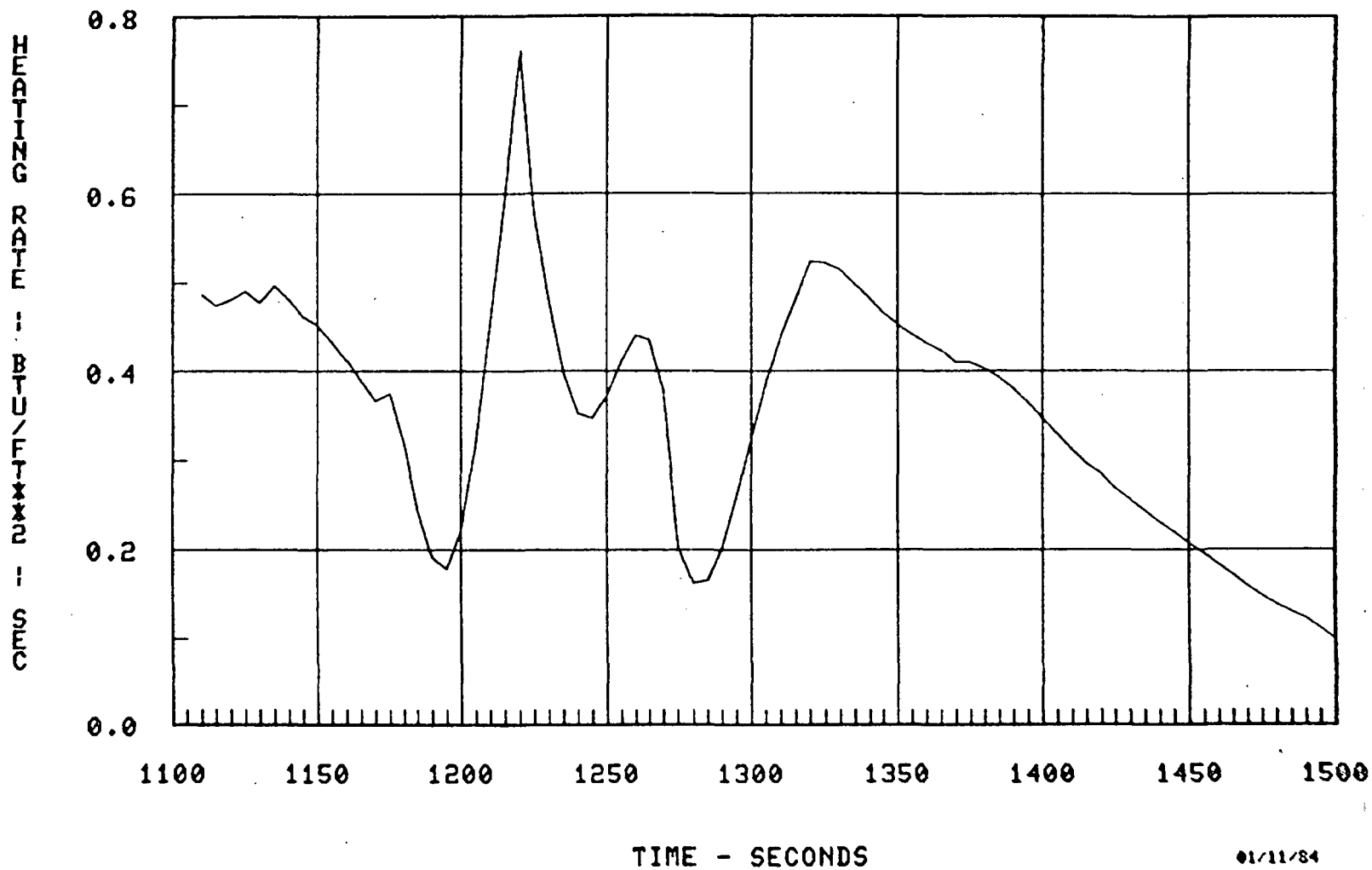


REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27695591.000 SEC.

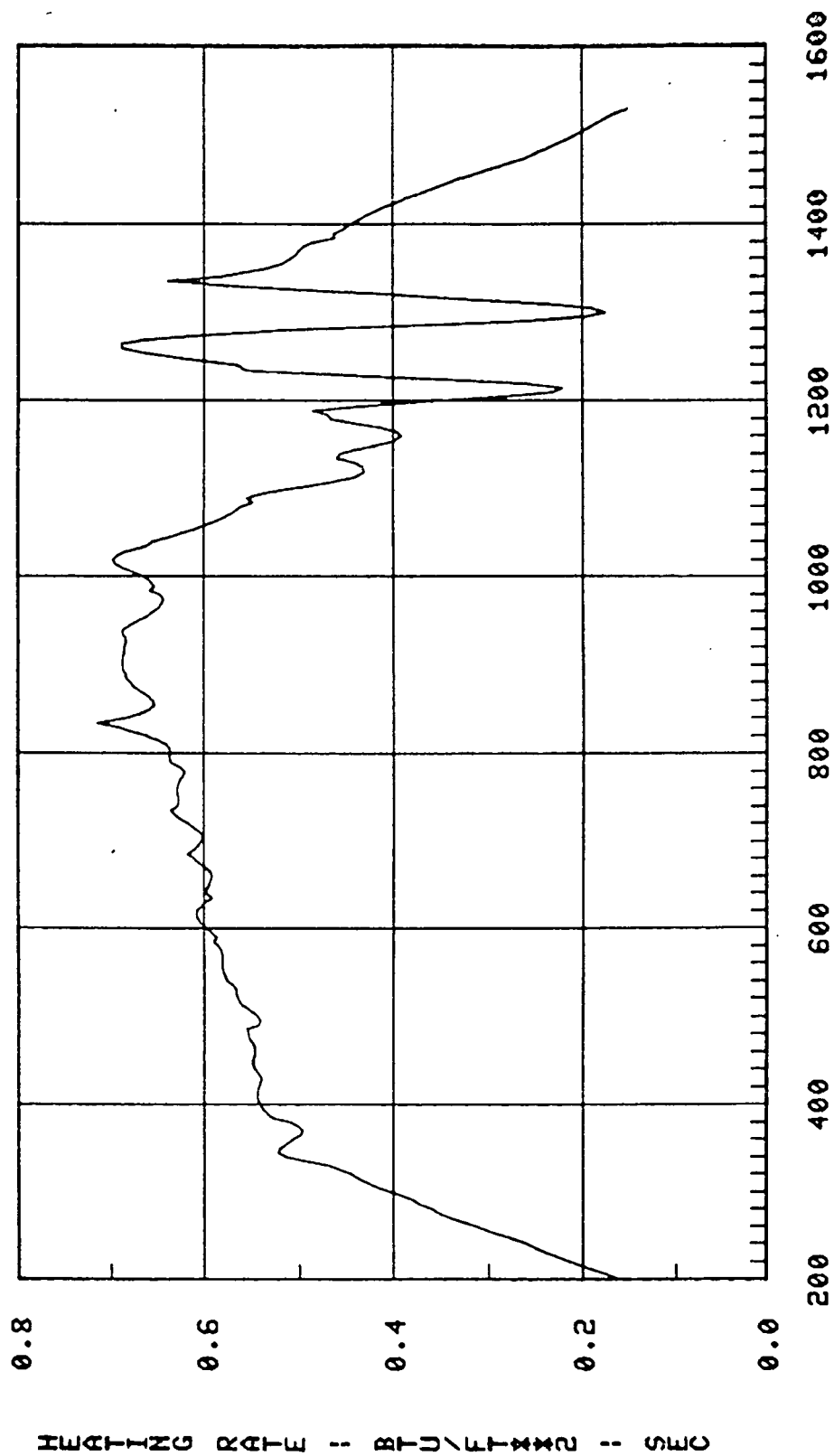
STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A



STS-2 (107 FT LENGTH SIDE FUS X/L=0.30) Z=400

U07T9893A

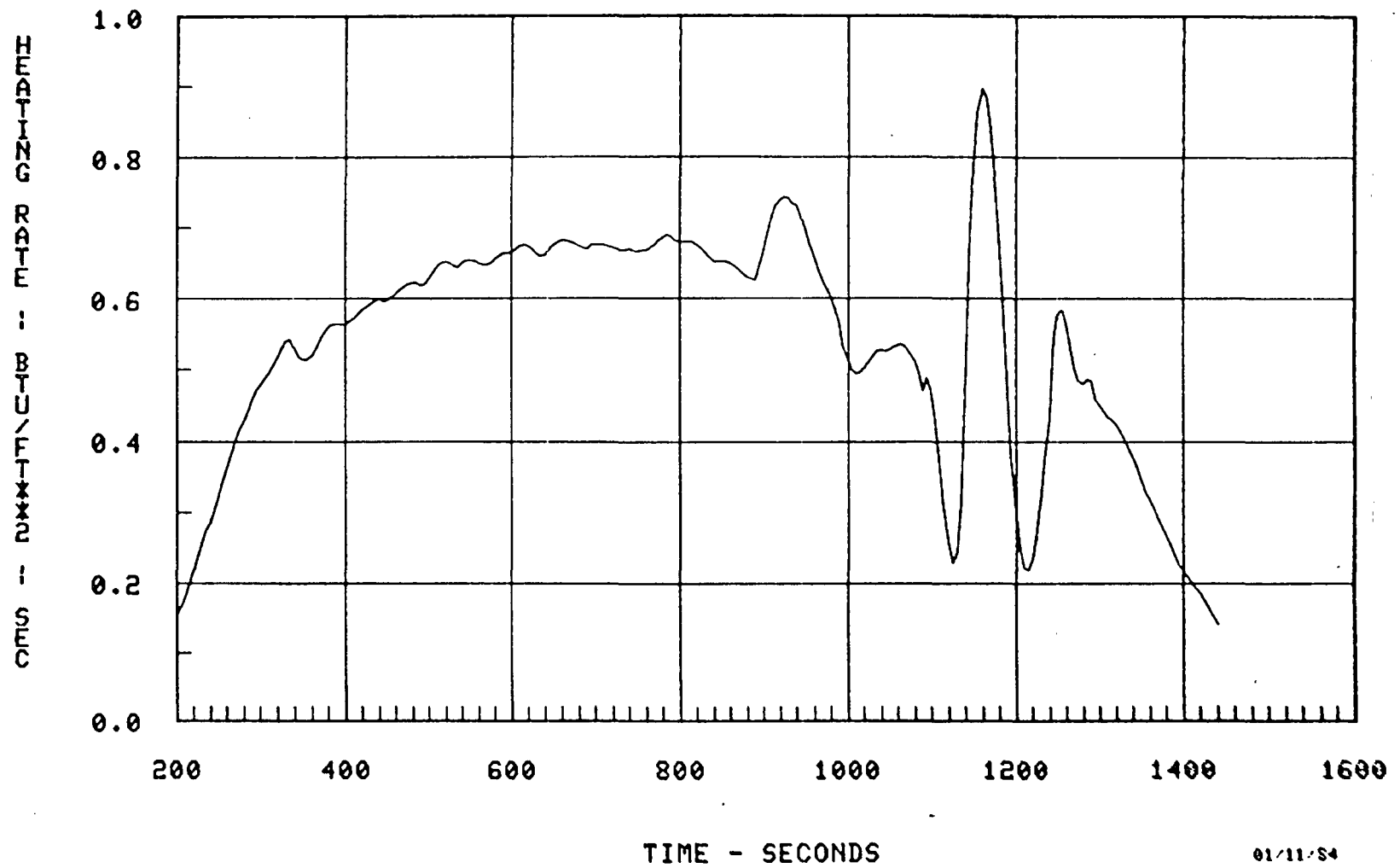


TIME - SECONDS

01/11/84

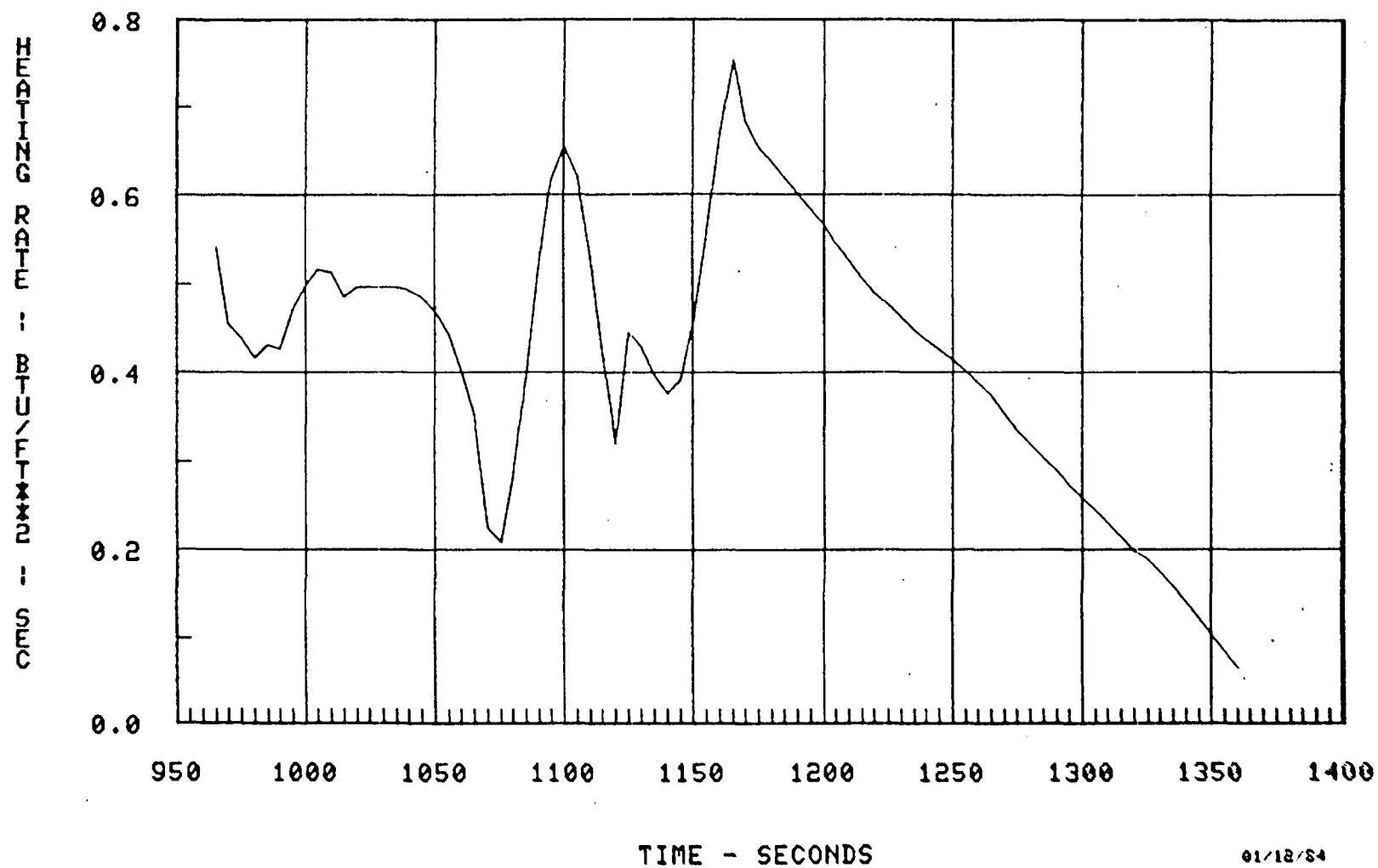
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A

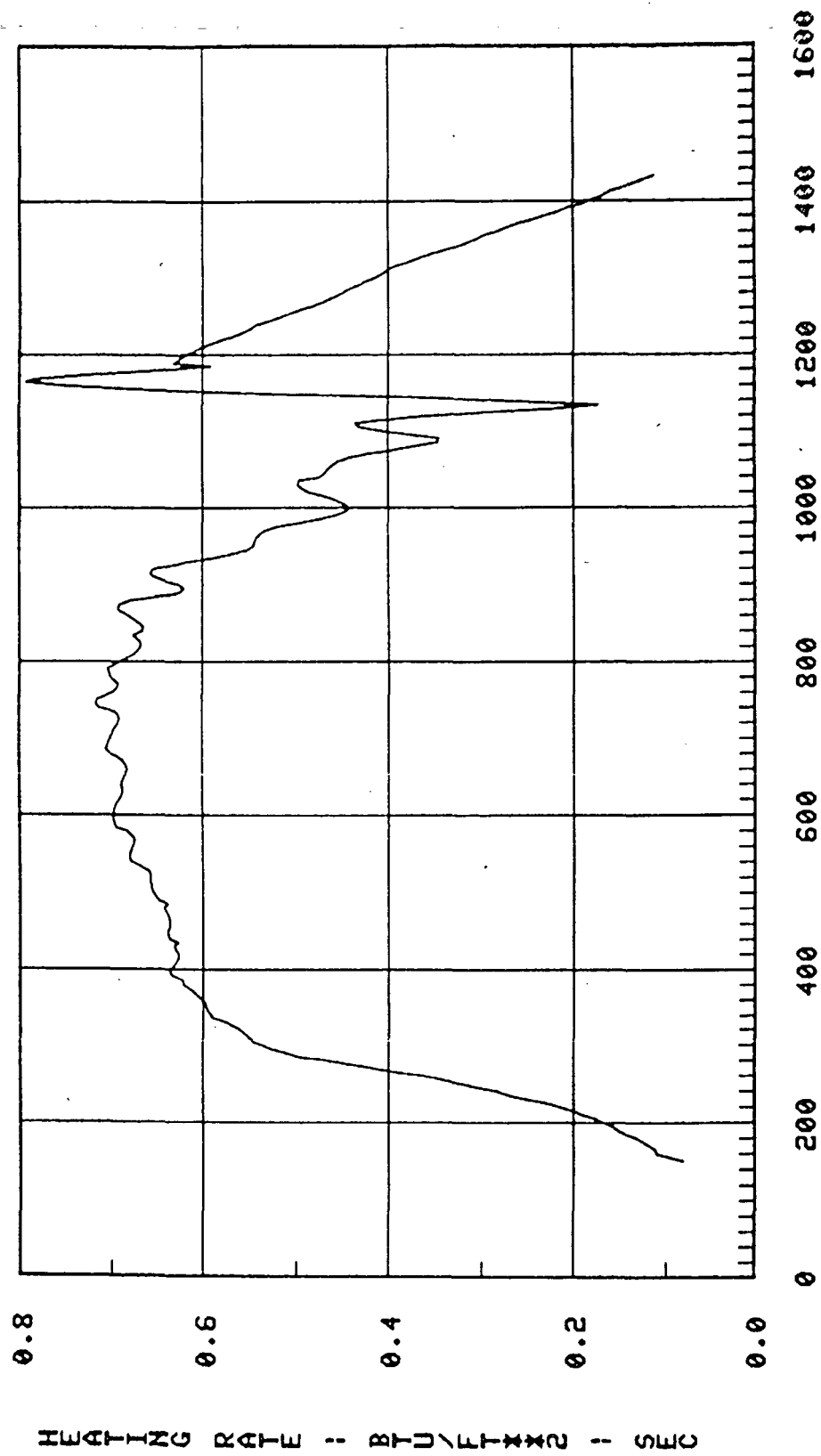


B-69

01/18/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A

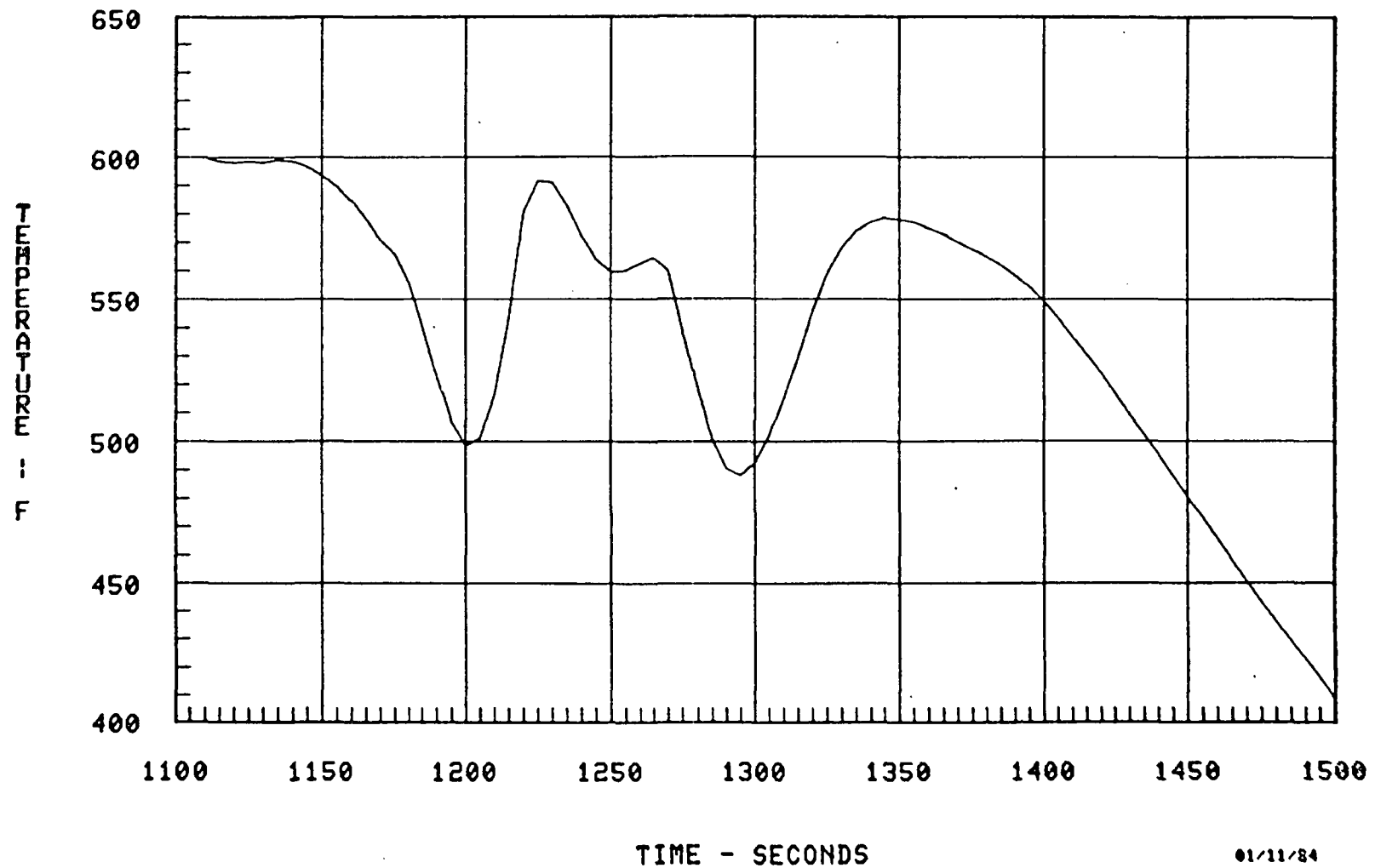


TIME - SECONDS

01/12/84

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A



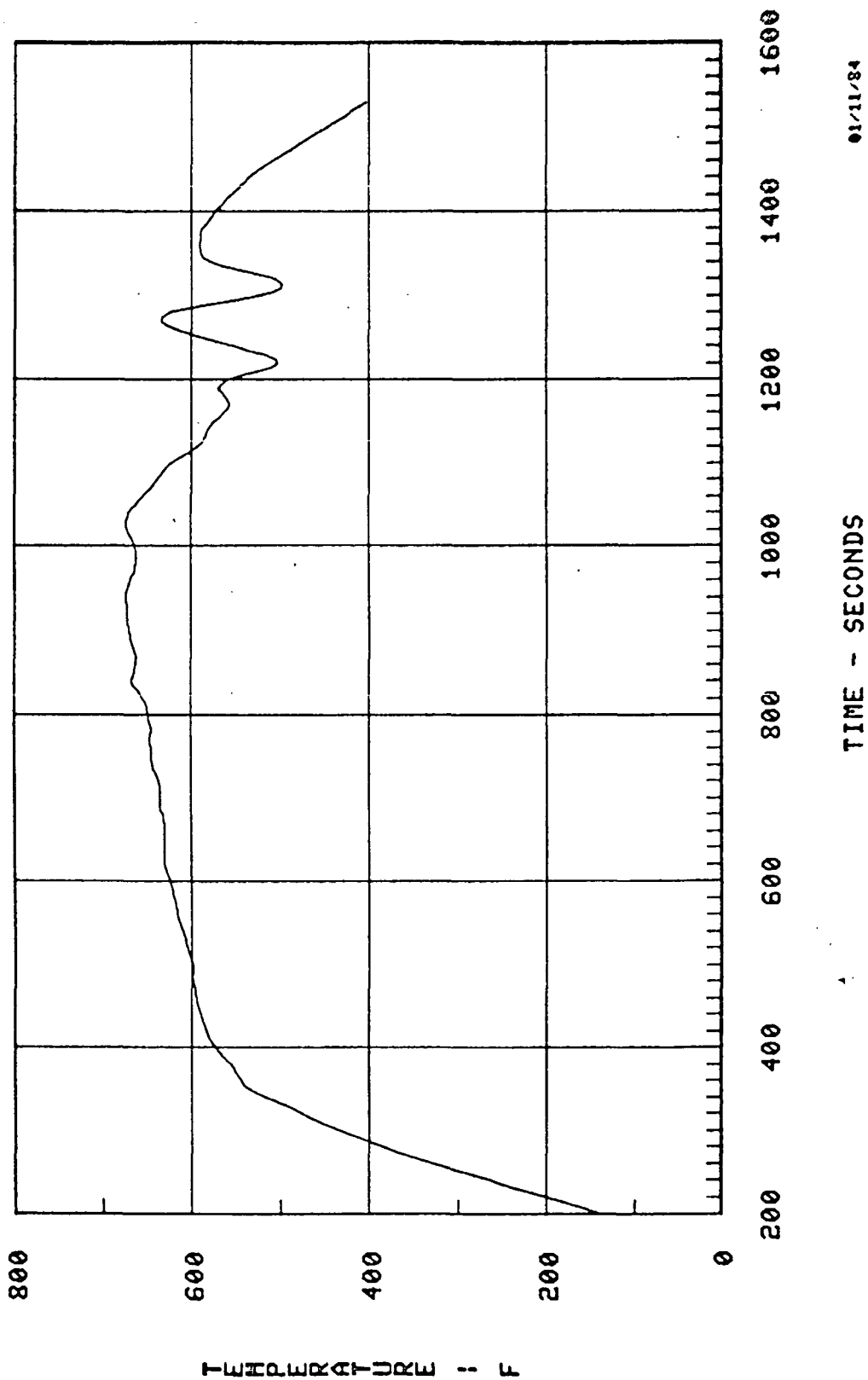
B-71

01/11/84



STS-2 (107 FT LENGTH SIDE FUS X/L=0.30) Z=400

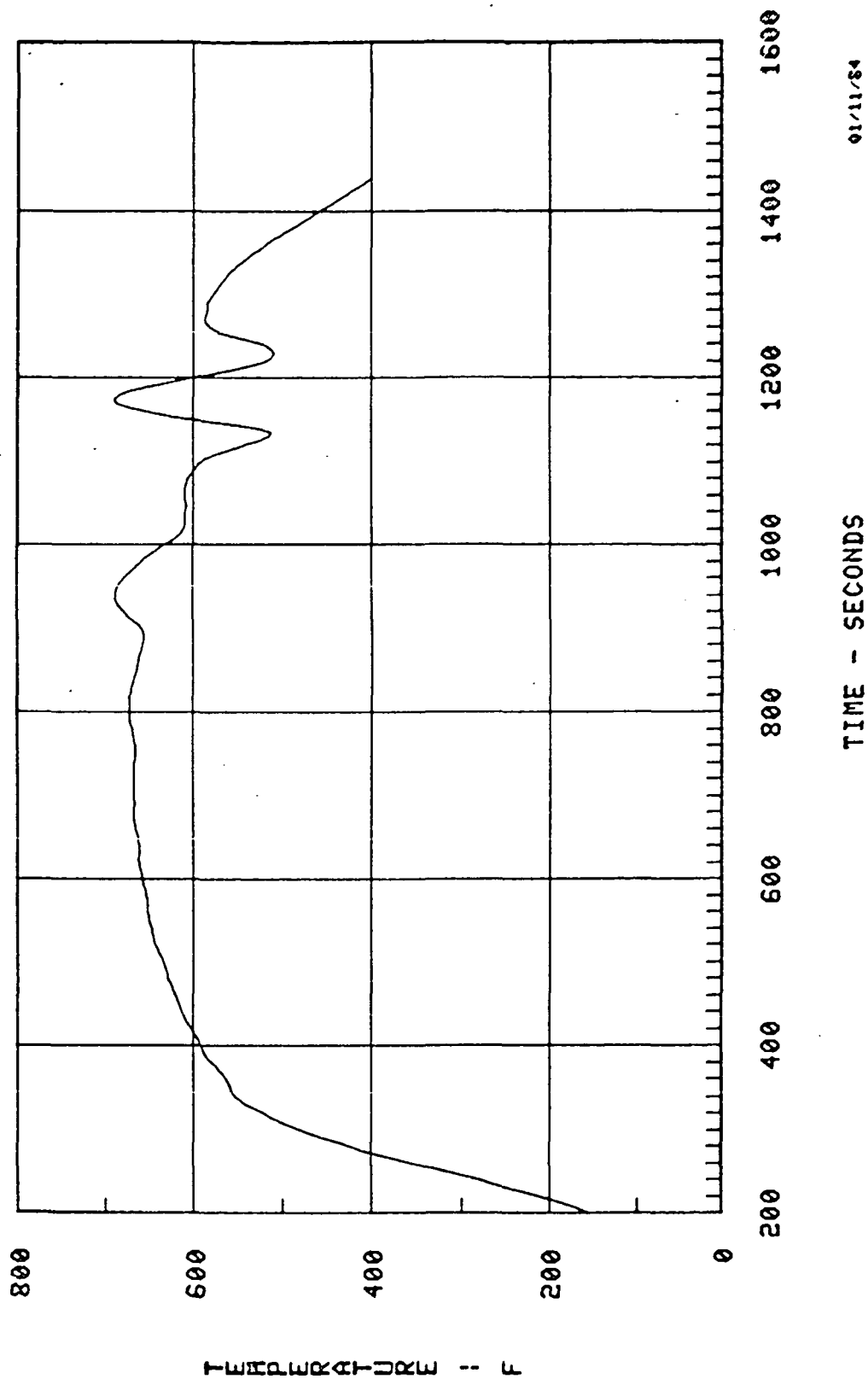
U07T9893A



01/11/84

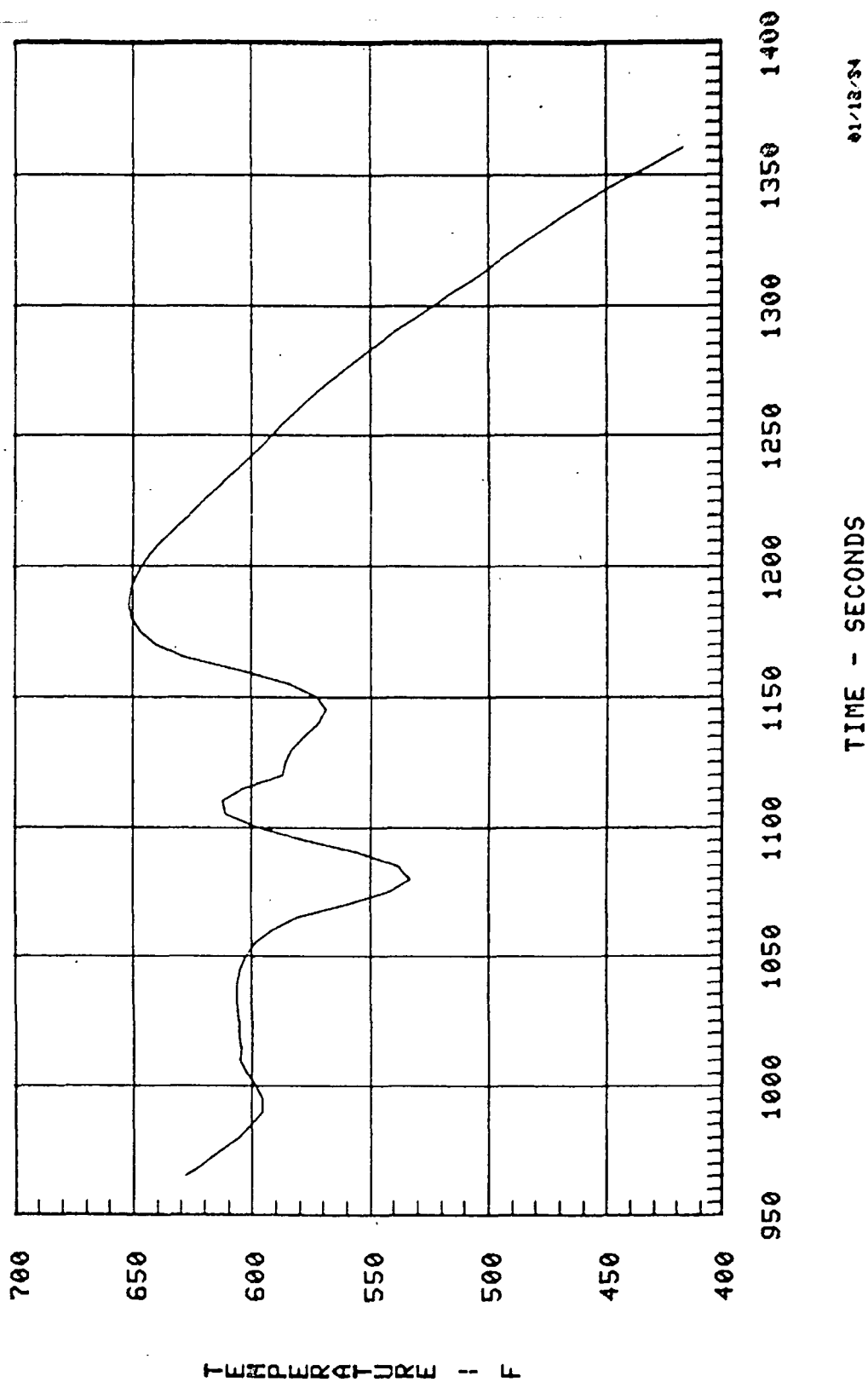
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U07T9893A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.30$ ) Z=400

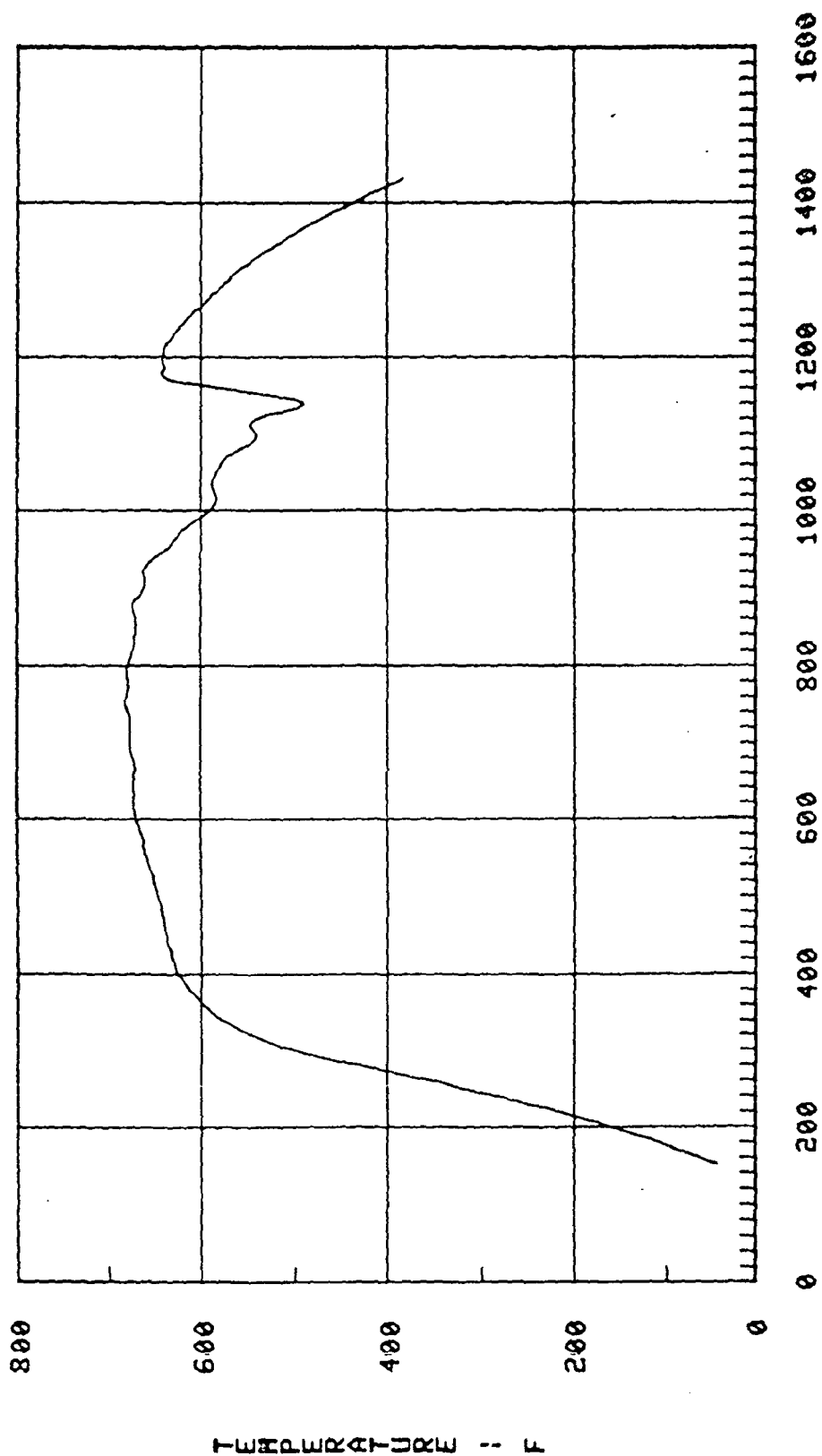
U07T9893A



01/12/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.30$ )  $Z=400$

U87T9893A



TIME - SECONDS

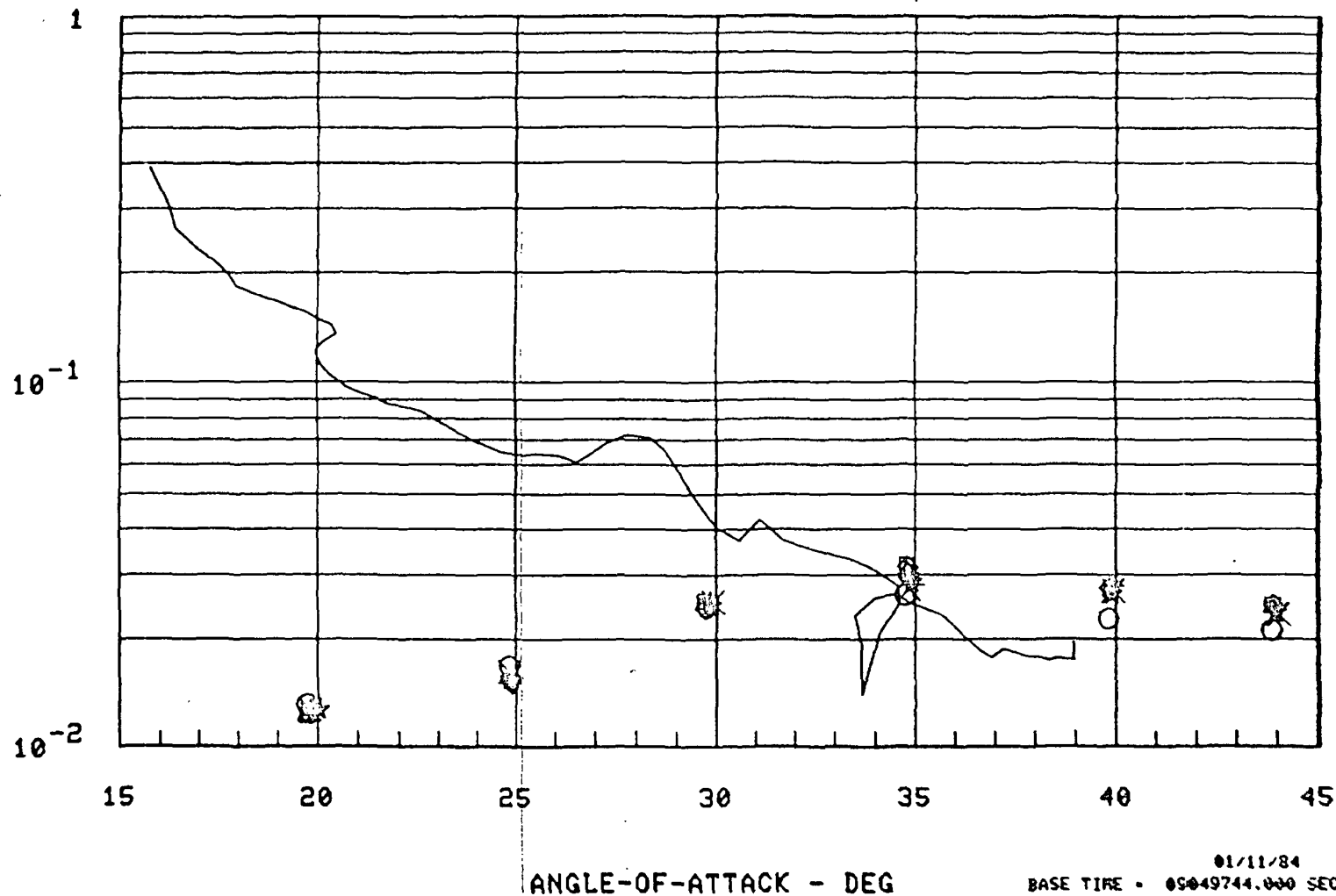
01/12/84

○ □ ◇ △ ▽ ☆ + ×

U07T9896A/H-REF 1065-1500 SEC

[illegible]

B-76



01/11/84

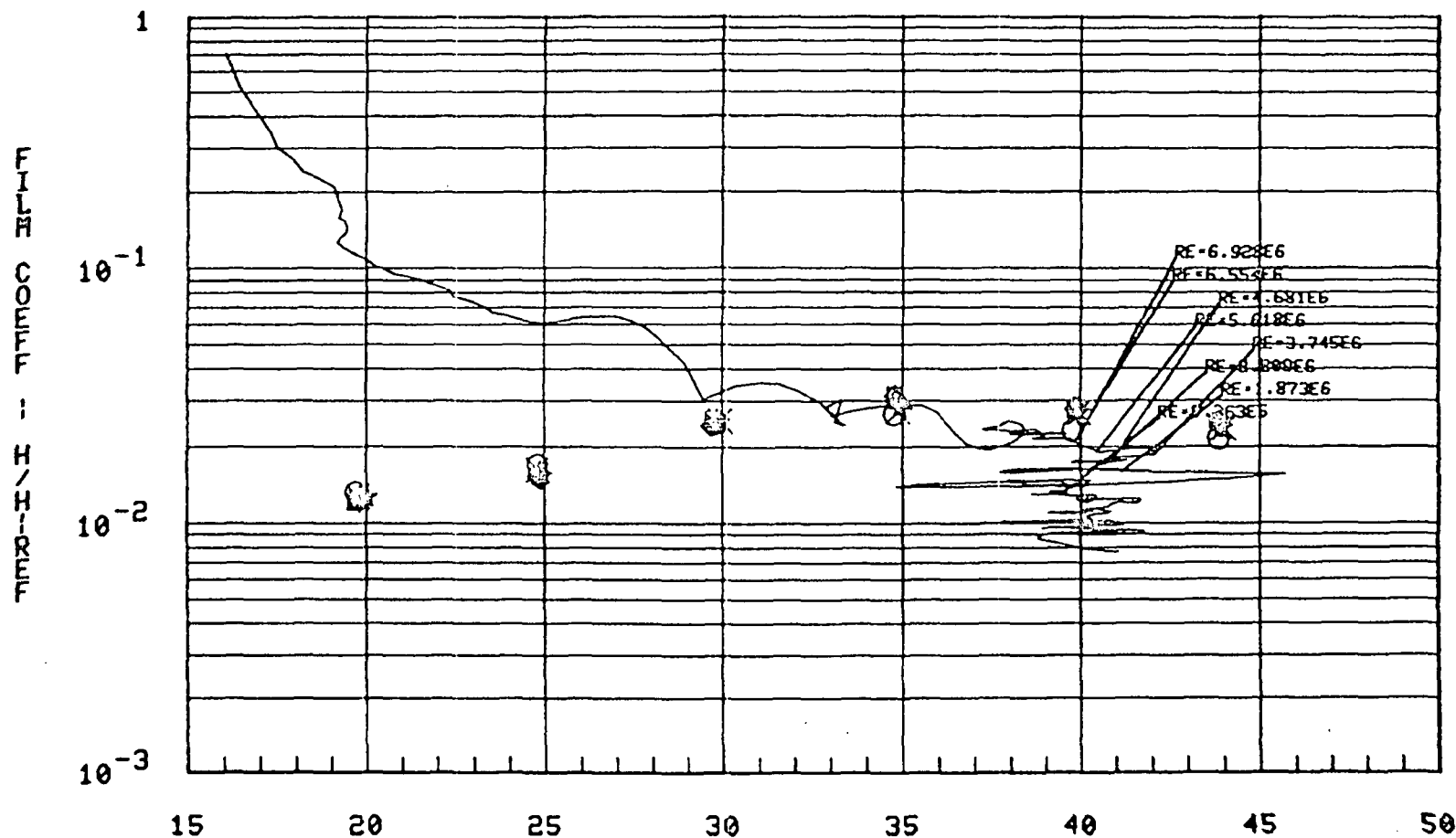
BASE TIME - 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

○  
□  
△  
▽  
+  
x

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9896A/H-REF 200-1530 SEC



B-77

ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

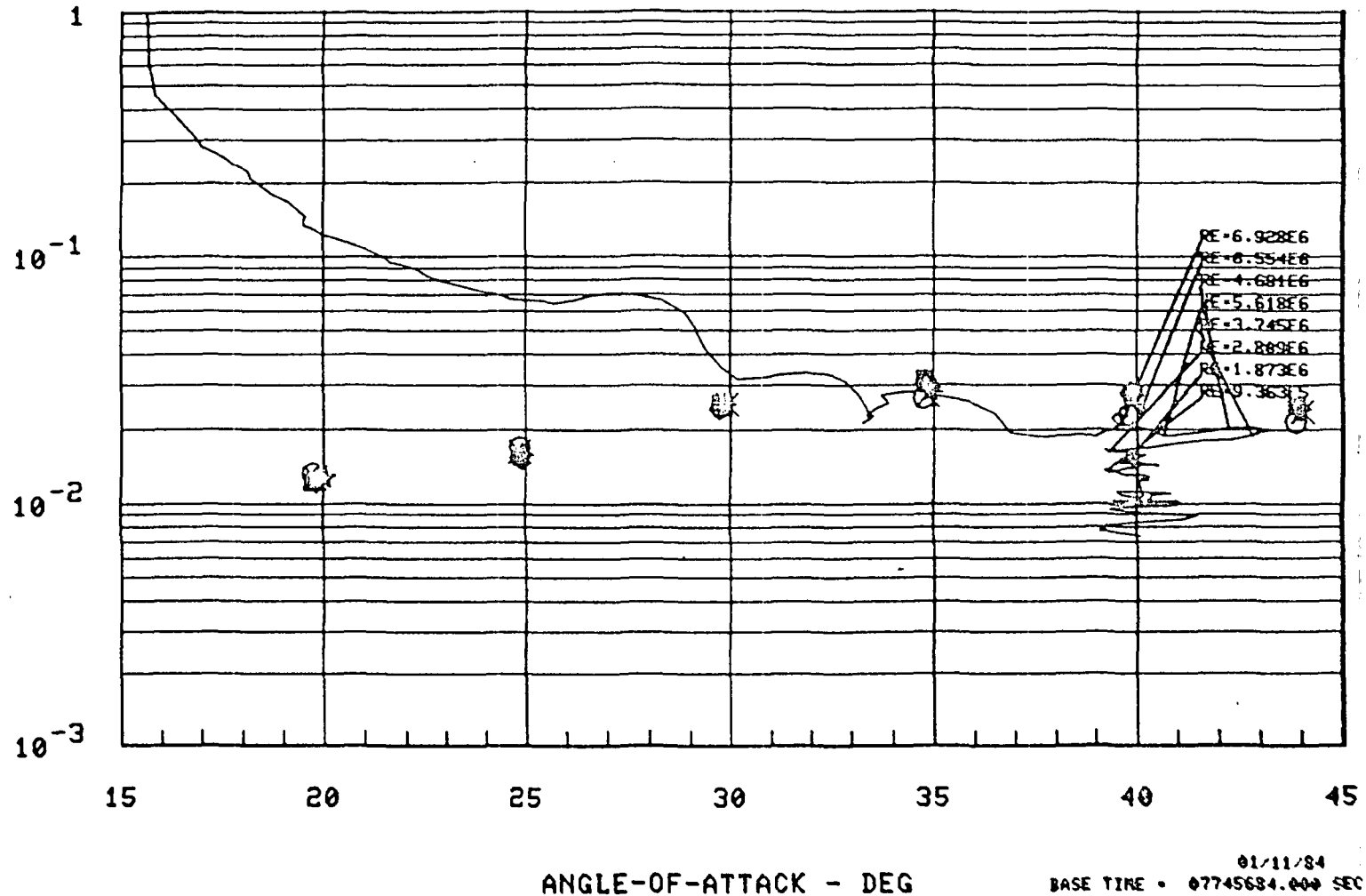
○  
□  
△  
★  
+  
X

0H74 0.0175 SCALE RE • 0.5 E06  
 0H74 0.0175 SCALE RE • 1.0 E06  
 0H74 0.0175 SCALE RE • 1.5 E06  
 0H74 0.0175 SCALE RE • 2.0 E06  
 0H74 0.0175 SCALE RE • 2.5 E06  
 0H74 0.0175 SCALE RE • 3.0 E06  
 0H74 0.0175 SCALE RE • 3.5 E06  
 0H74 0.0175 SCALE RE • 3.7 E06

U07T9896A/H-REF 200-1440 SEC

FILE COUNTE - H/H-REF

B-78



# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

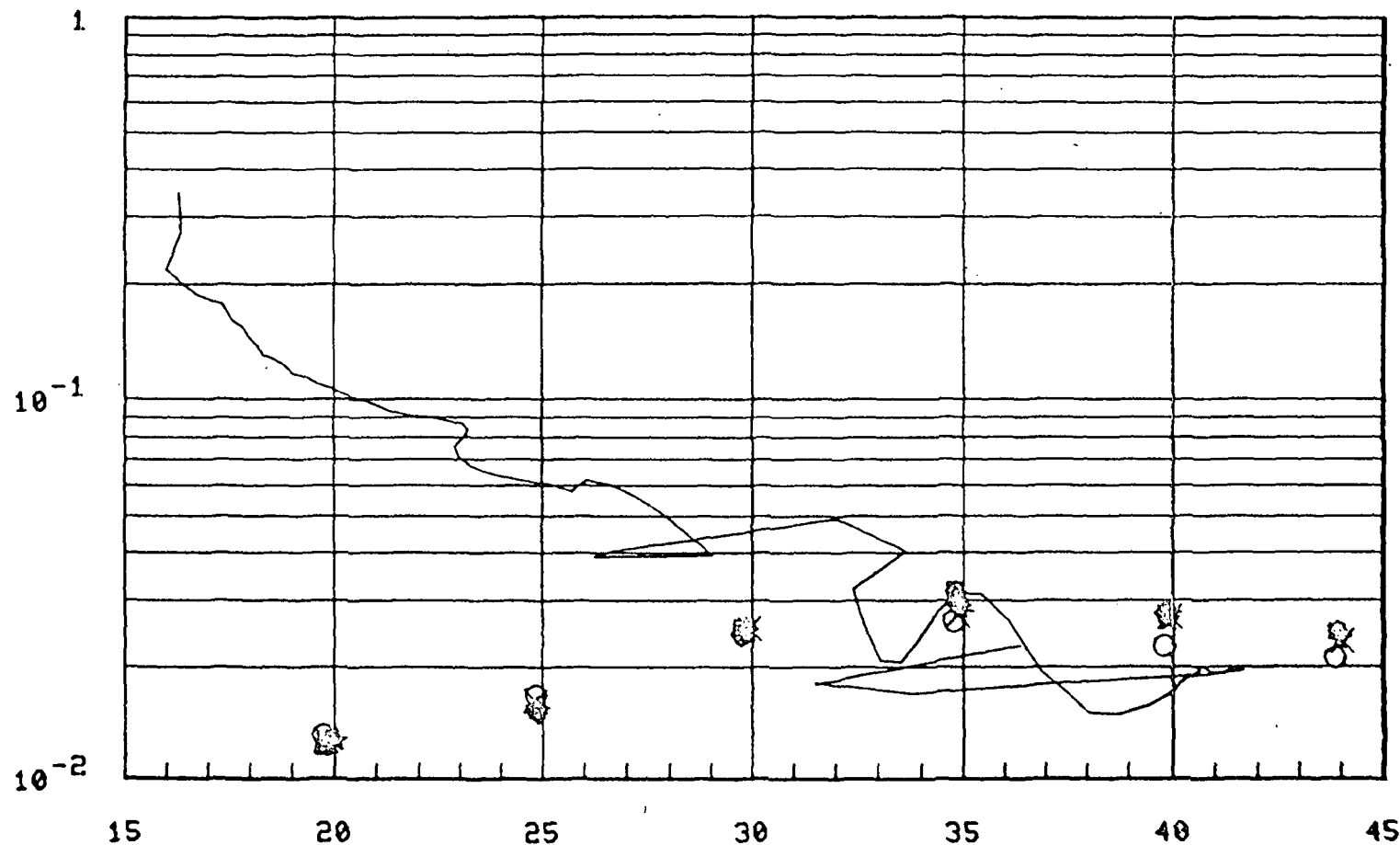
○  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9896A/H-REF 965-1360 SEC

FILE CODE - H/H-REF

B-79



ANGLE-OF-ATTACK - DEG.

01/12/84  
 BASE TIME = 16040423.000 SEC.

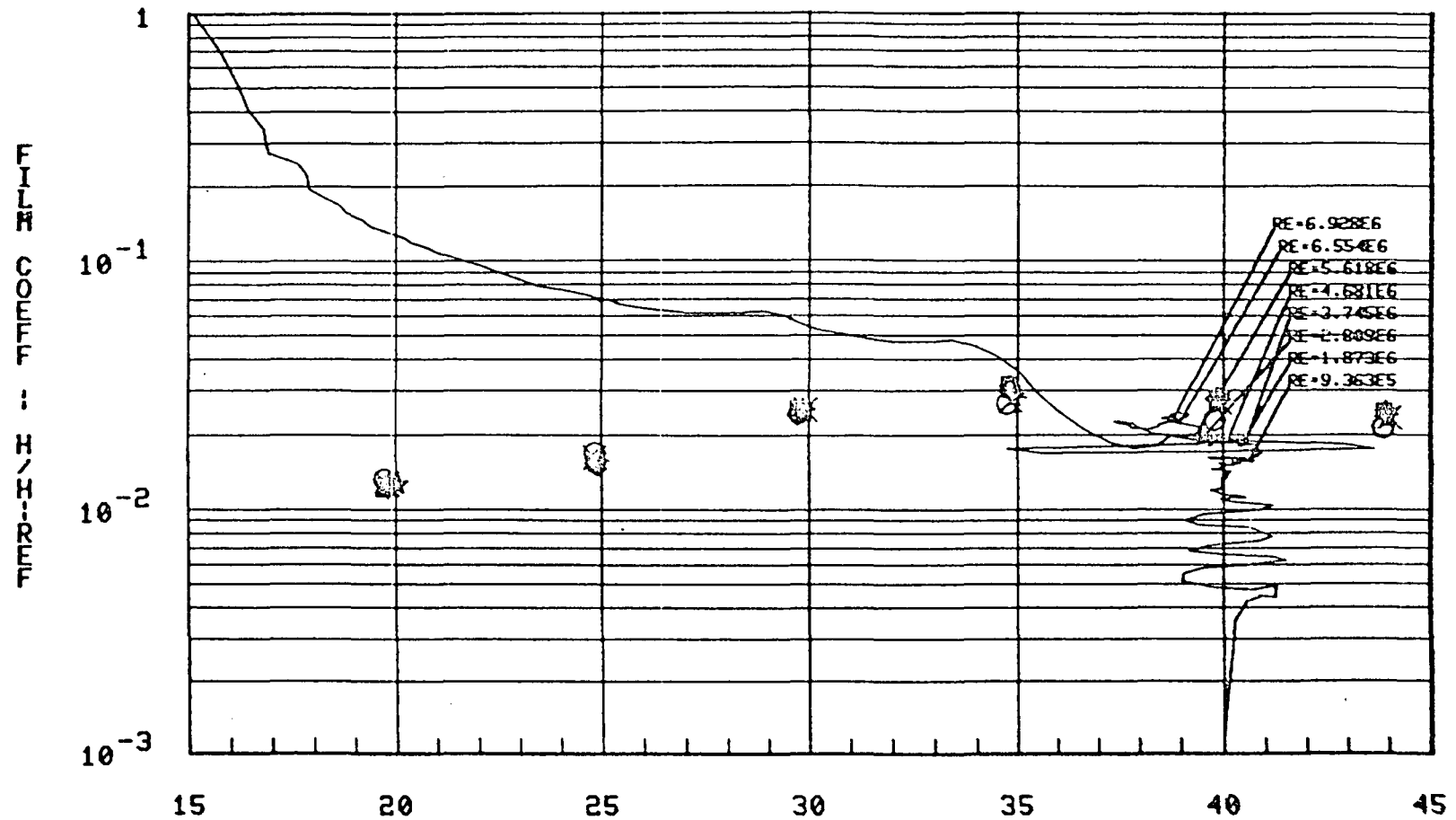


# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

○  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9896A/H-REF 150-1430 SEC



ANGLE-OF-ATTACK - DEG

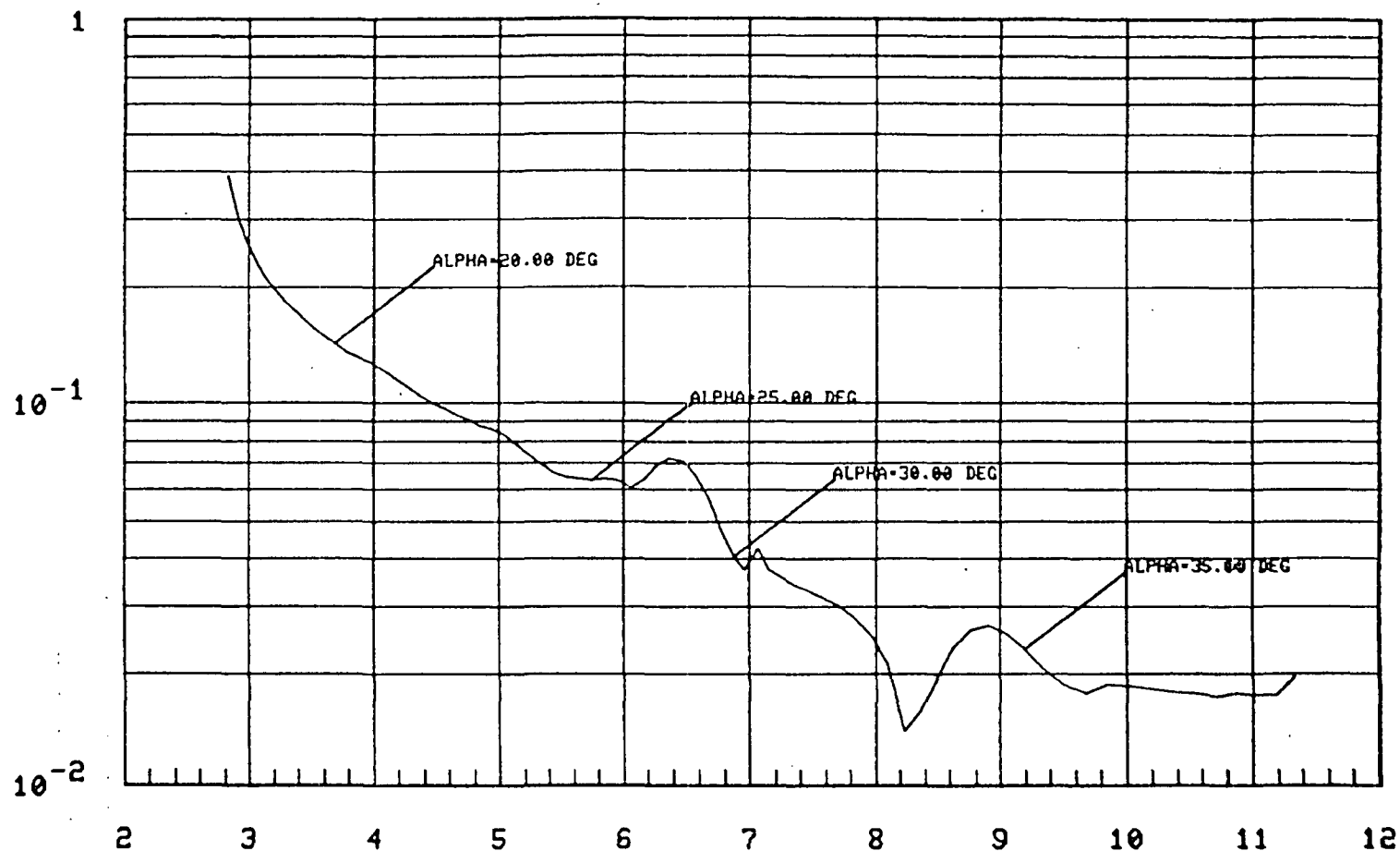
01/12/84  
BASE TIME = 27693591.000 SEC.

# STS-1 (107 FT. LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

U07T9896A/H-REF 1065-1500 SEC

WALL CORREL - H/H-REF

B-81

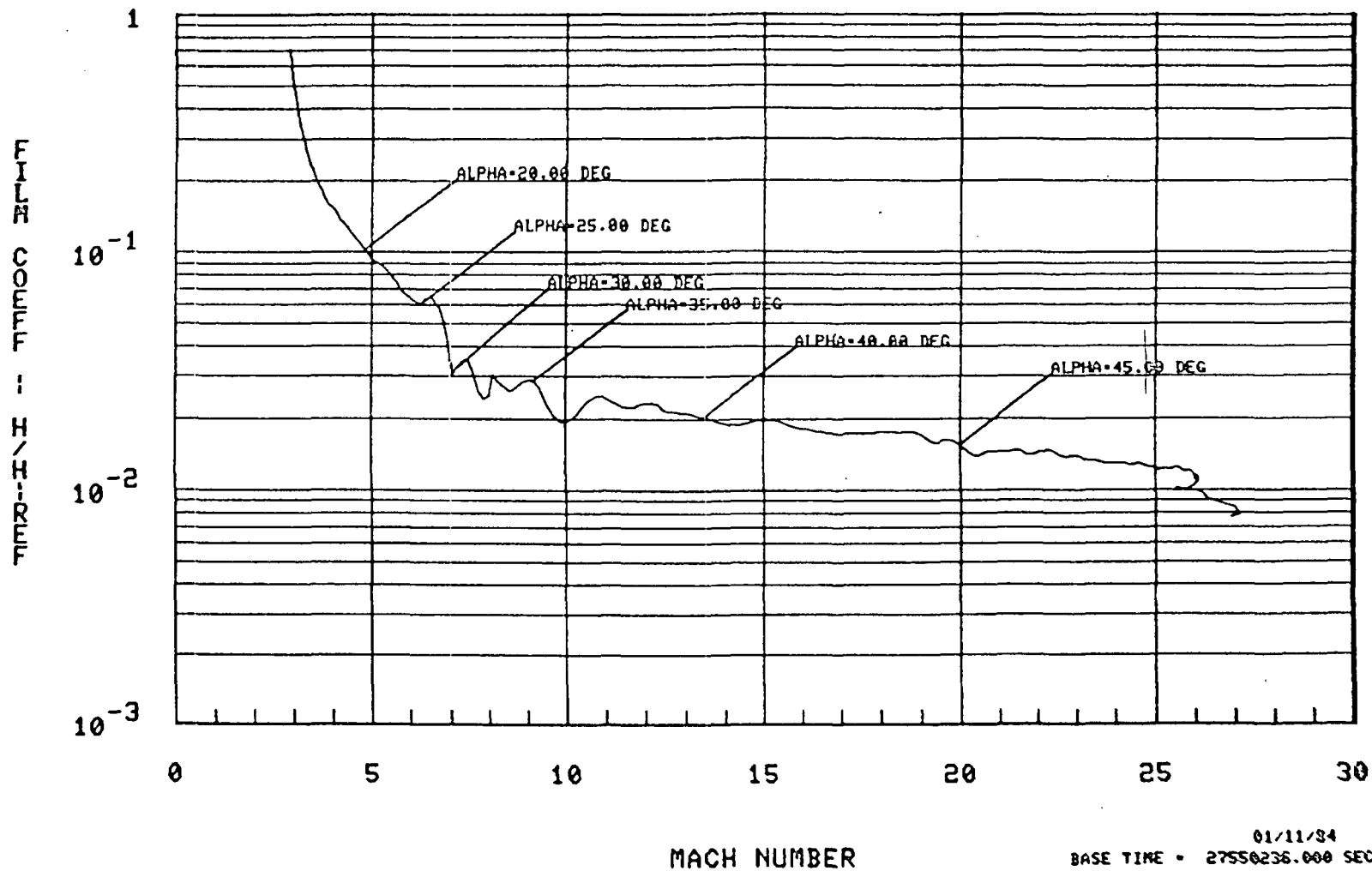


MACH NUMBER

01/11/84  
BASE TIME = 09049744.000 SEC.

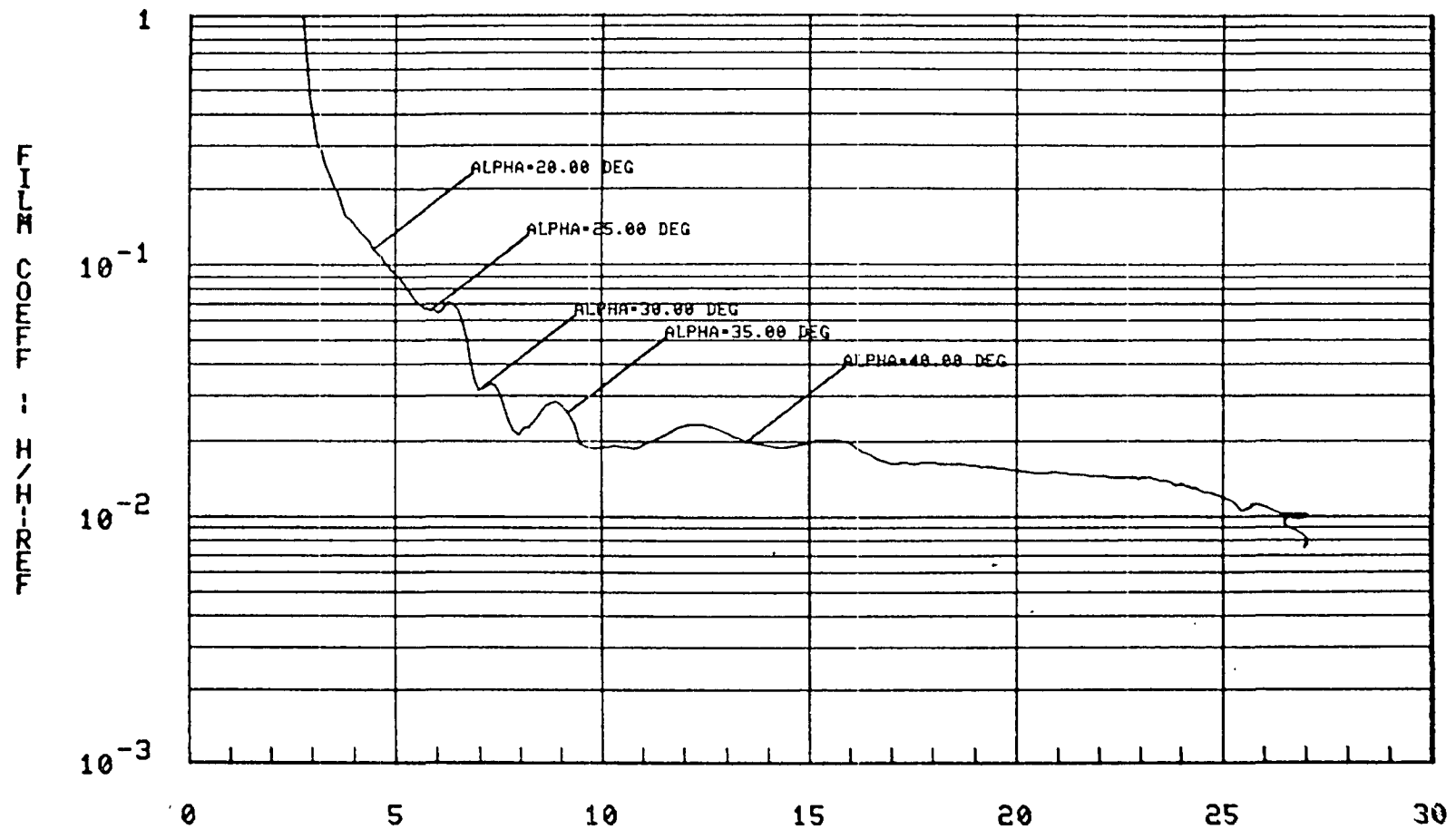
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

U07T9896A/H-REF 200-1530 SEC



STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A/H-REF 200-1440 SEC



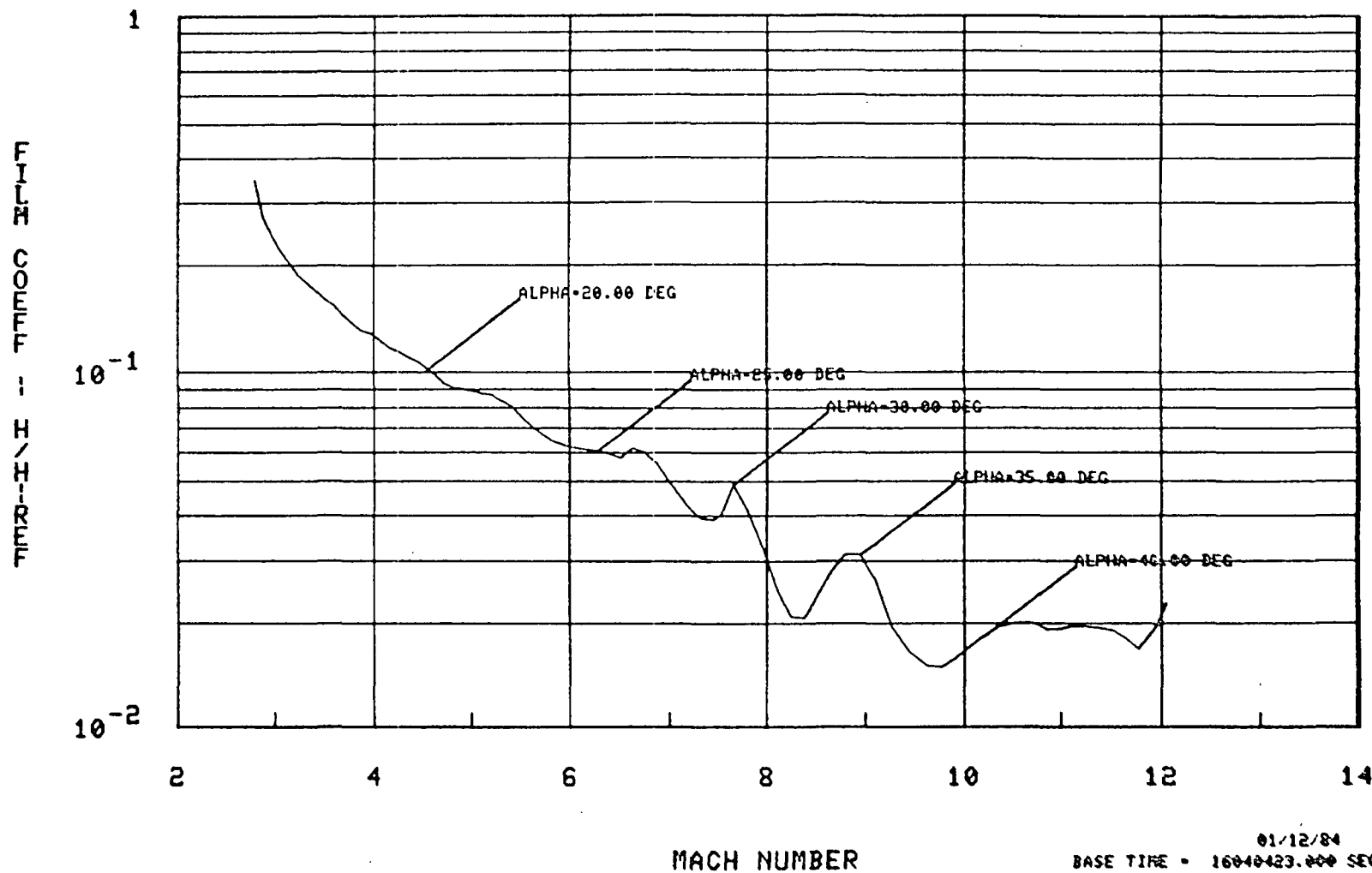
B-83

MACH NUMBER

01/11/84  
BASE TIME = 07745634.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

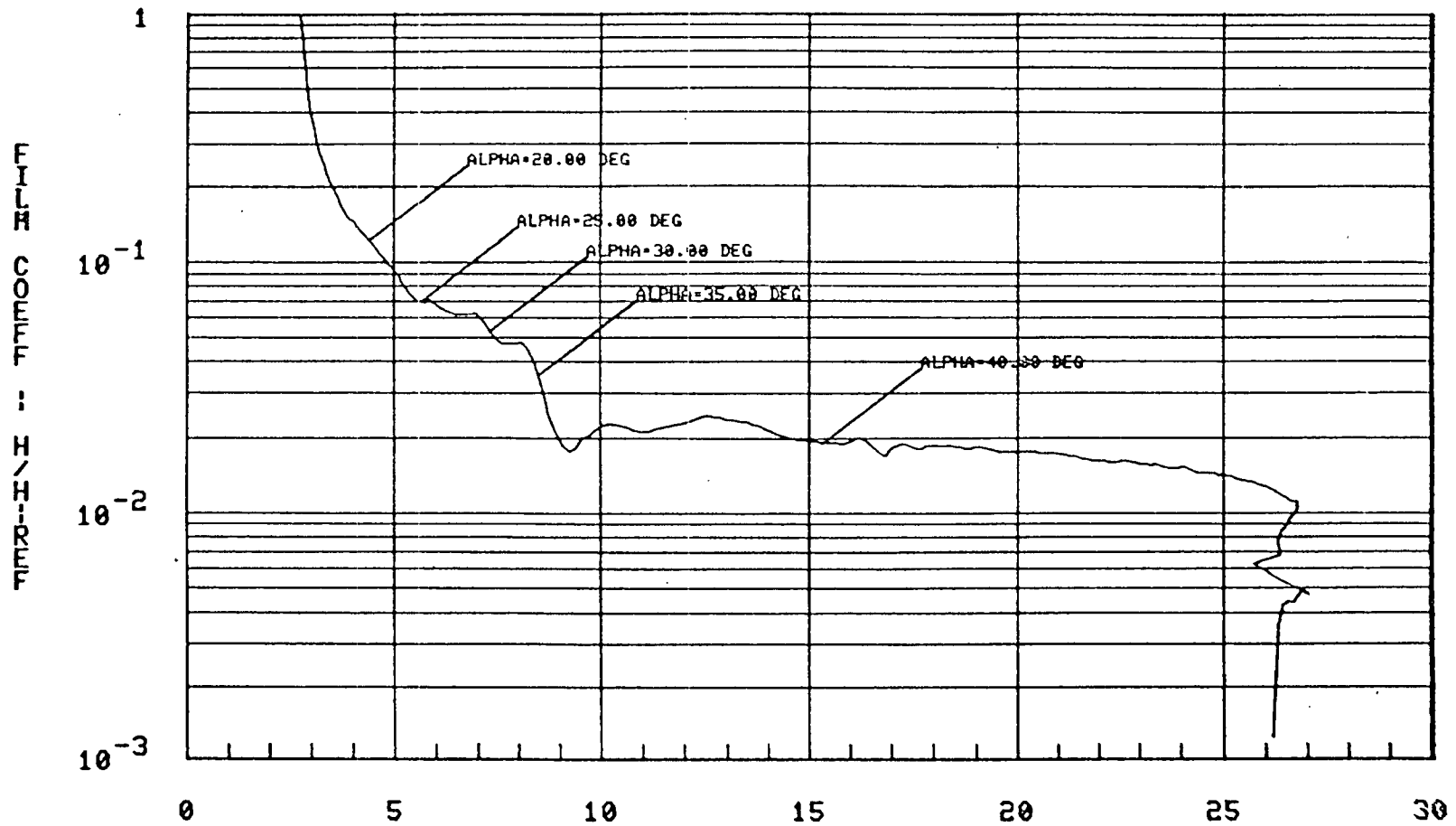
U07T9896A/H-REF 965-1360 SEC



B-84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A/H-REF 150-1430 SEC



MACH NUMBER

01/12/84  
BASE TIME - 27695591.000 SEC.

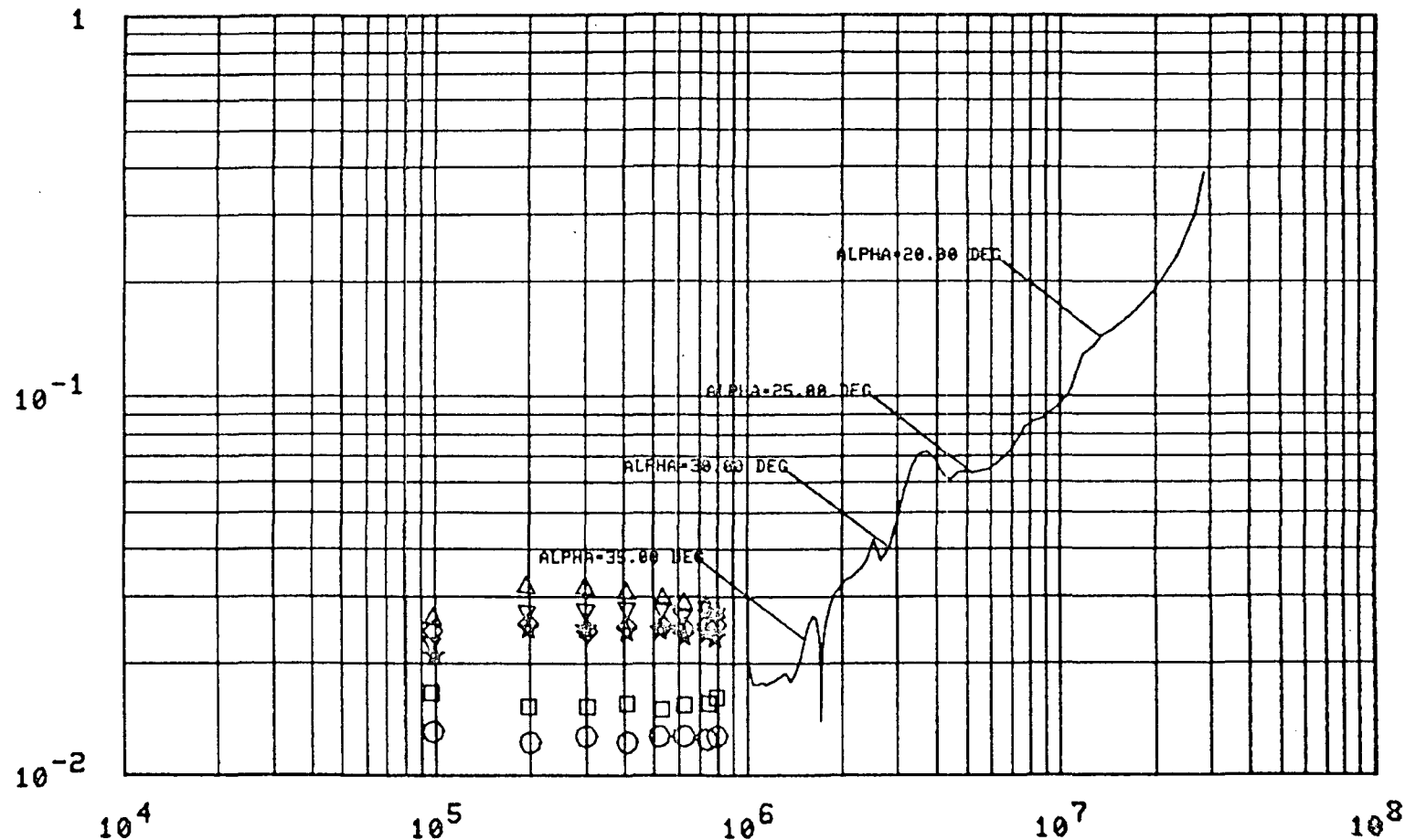
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9896A/H-REF 1065-1500 SEC

LINE CODEL : H/I-REF



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 09049744.000 SEC.

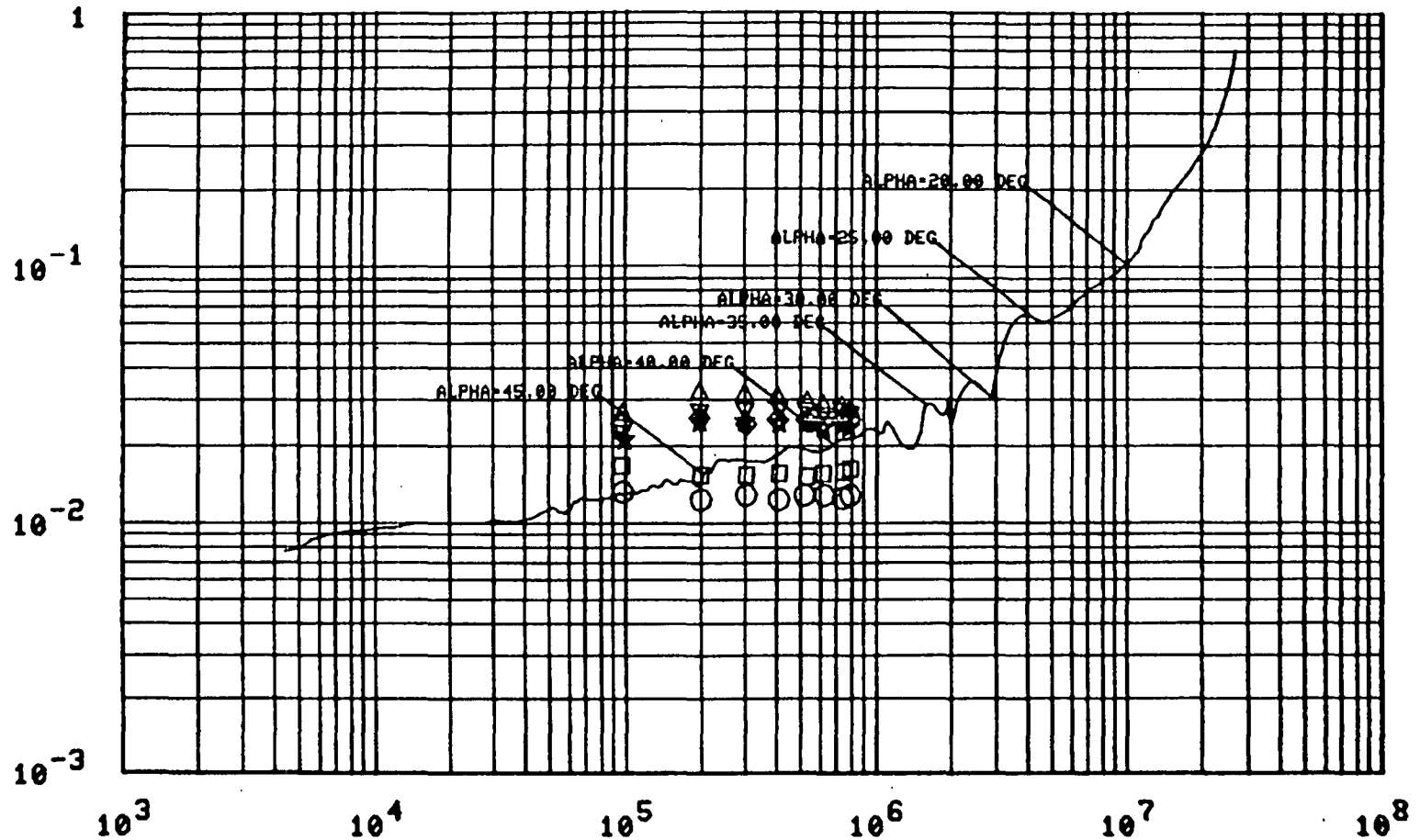
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

○  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9896A/H-REF 200-1530 SEC

WALL COEFF -  $H/H_{REF}$



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 27550236.000 SEC.



# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

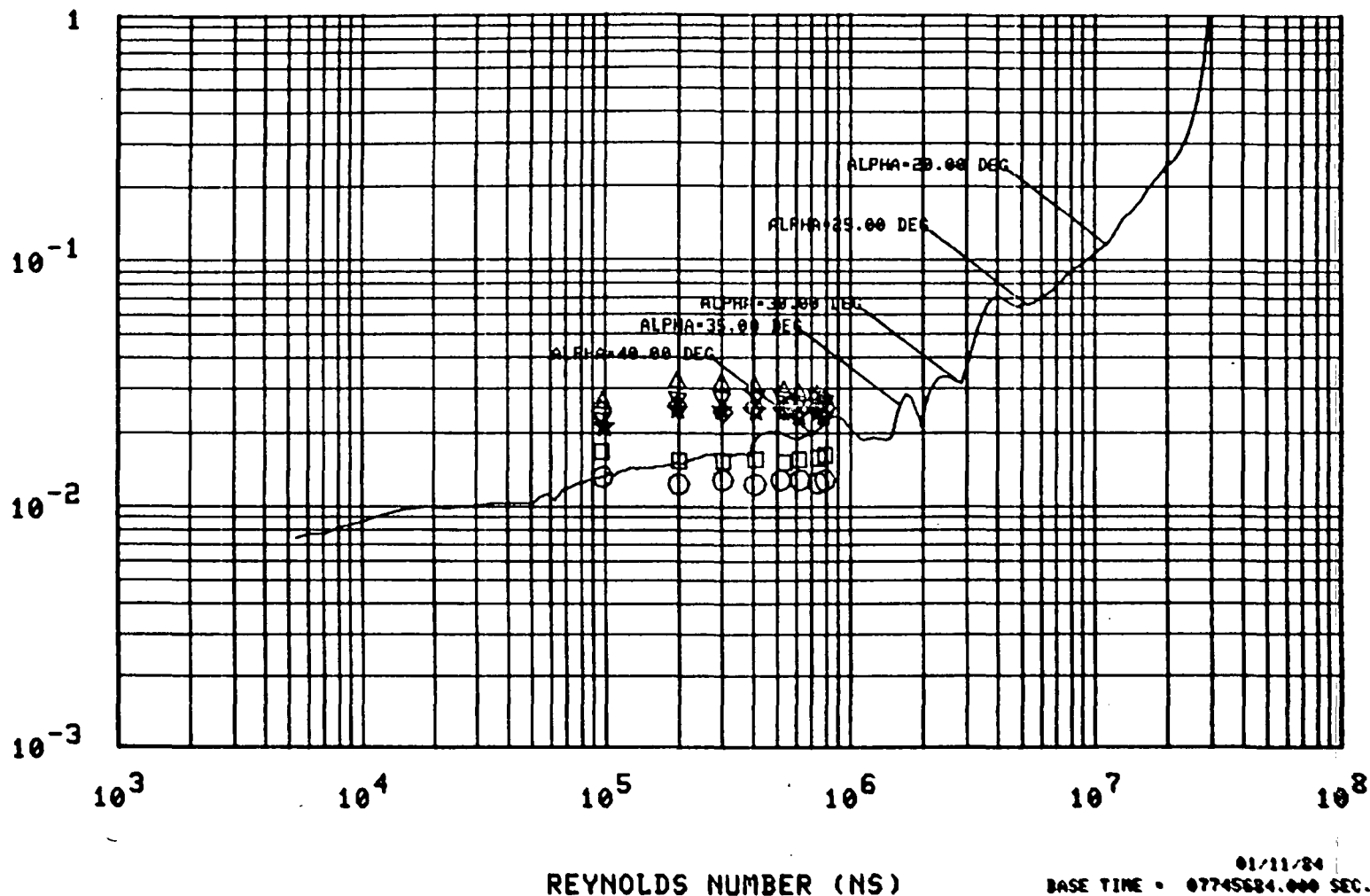
○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9896A/H-REF 200-1440 SEC

TIME CORRECTION - H/H-CORR

B-88

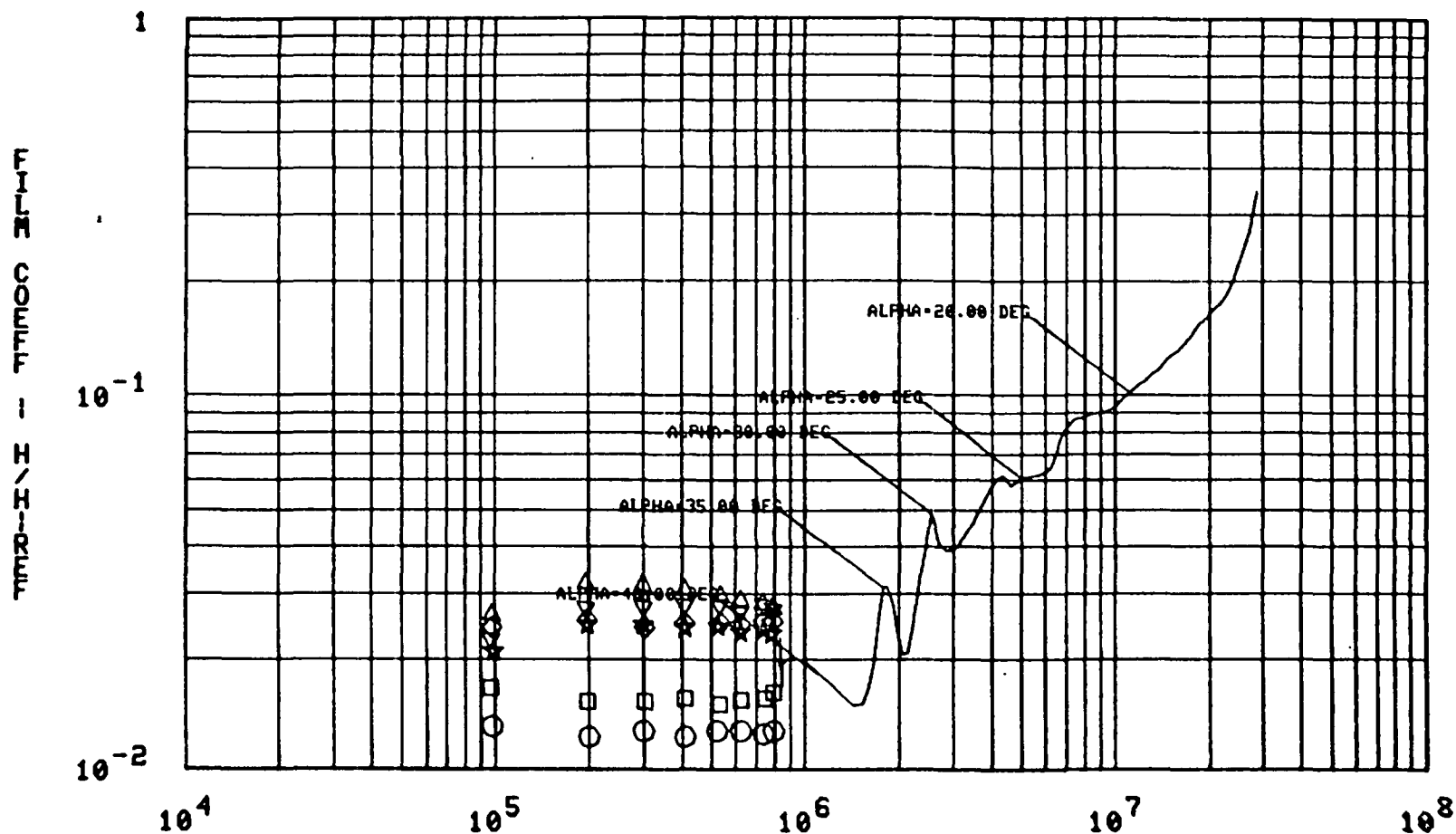


# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

○  
□  
◇  
△  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9B96A/H-REF 965-1360 SEC



B-89

REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

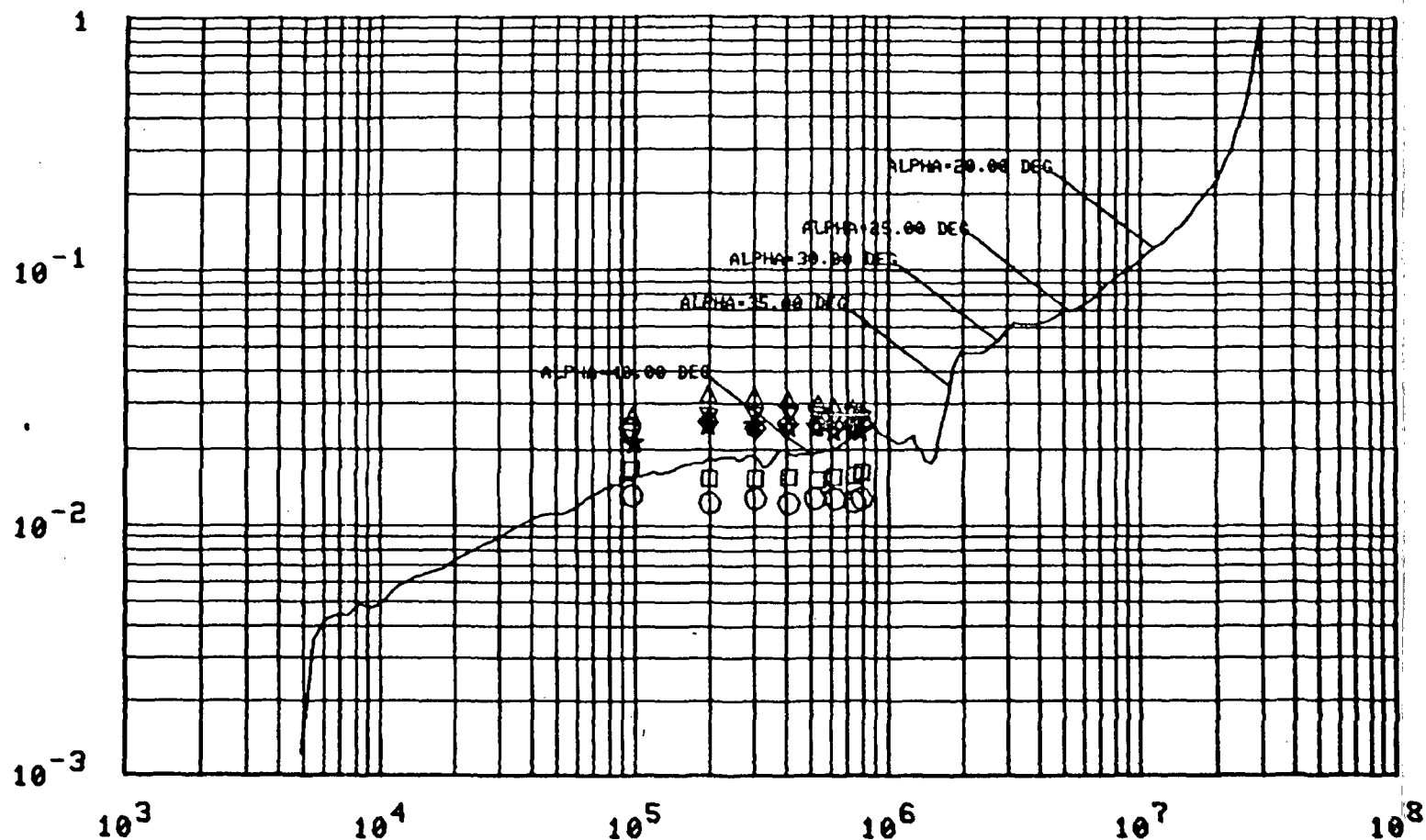
○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9896A/H-REF 150-1430 SEC

B-90

FLUX COEFF - H/H-REF

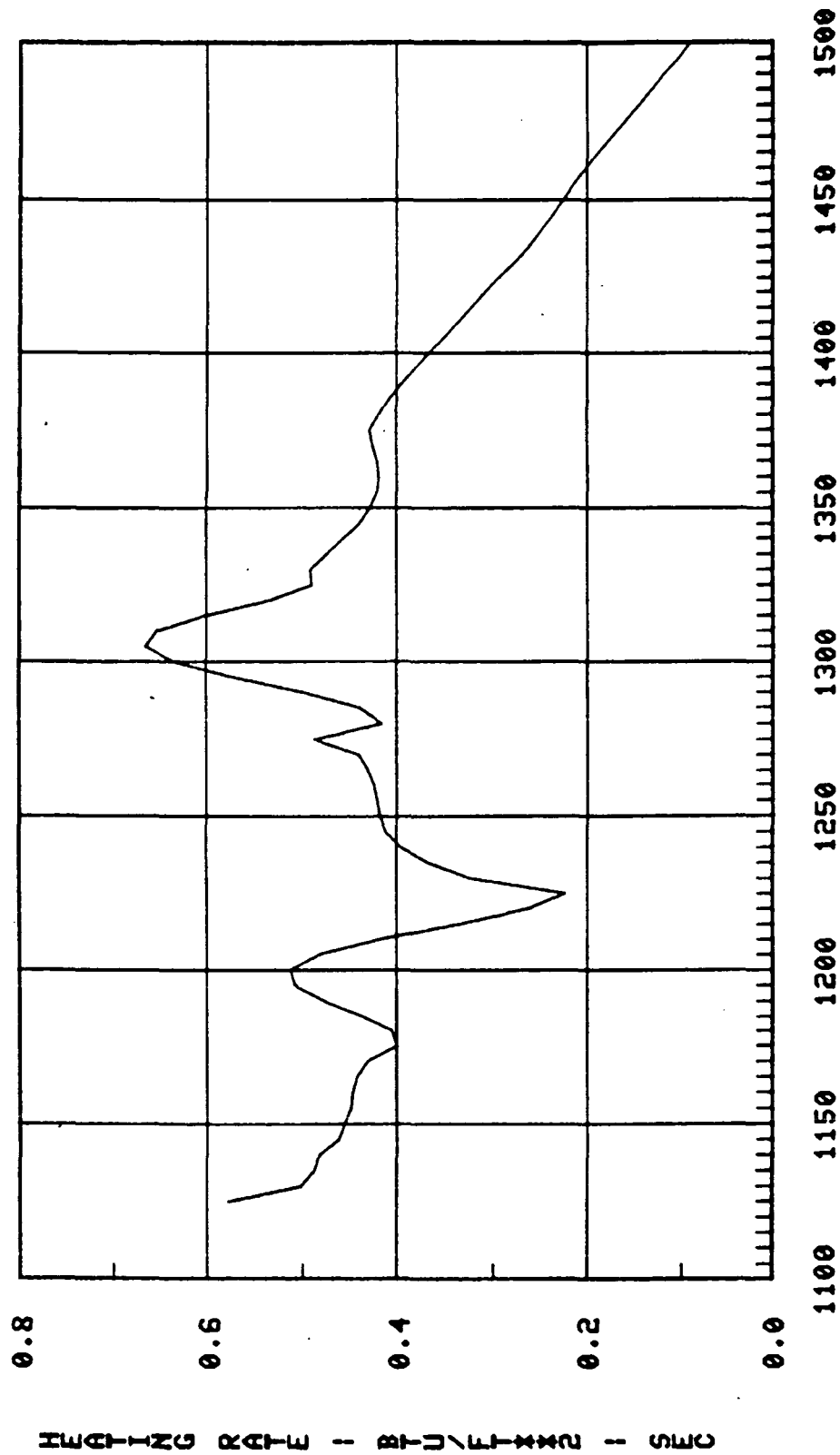


REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A

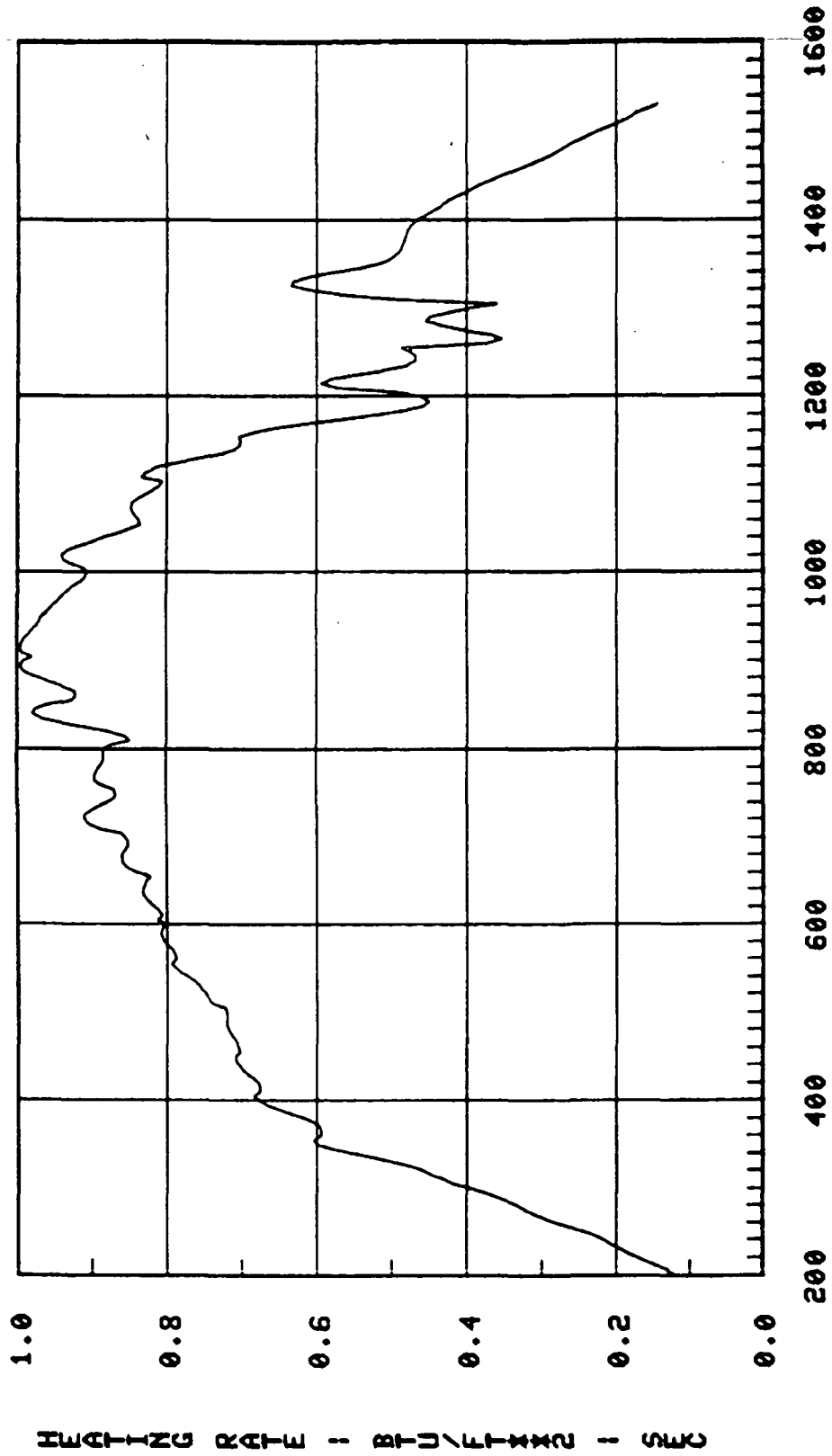


TIME - SECONDS

01/11/84

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

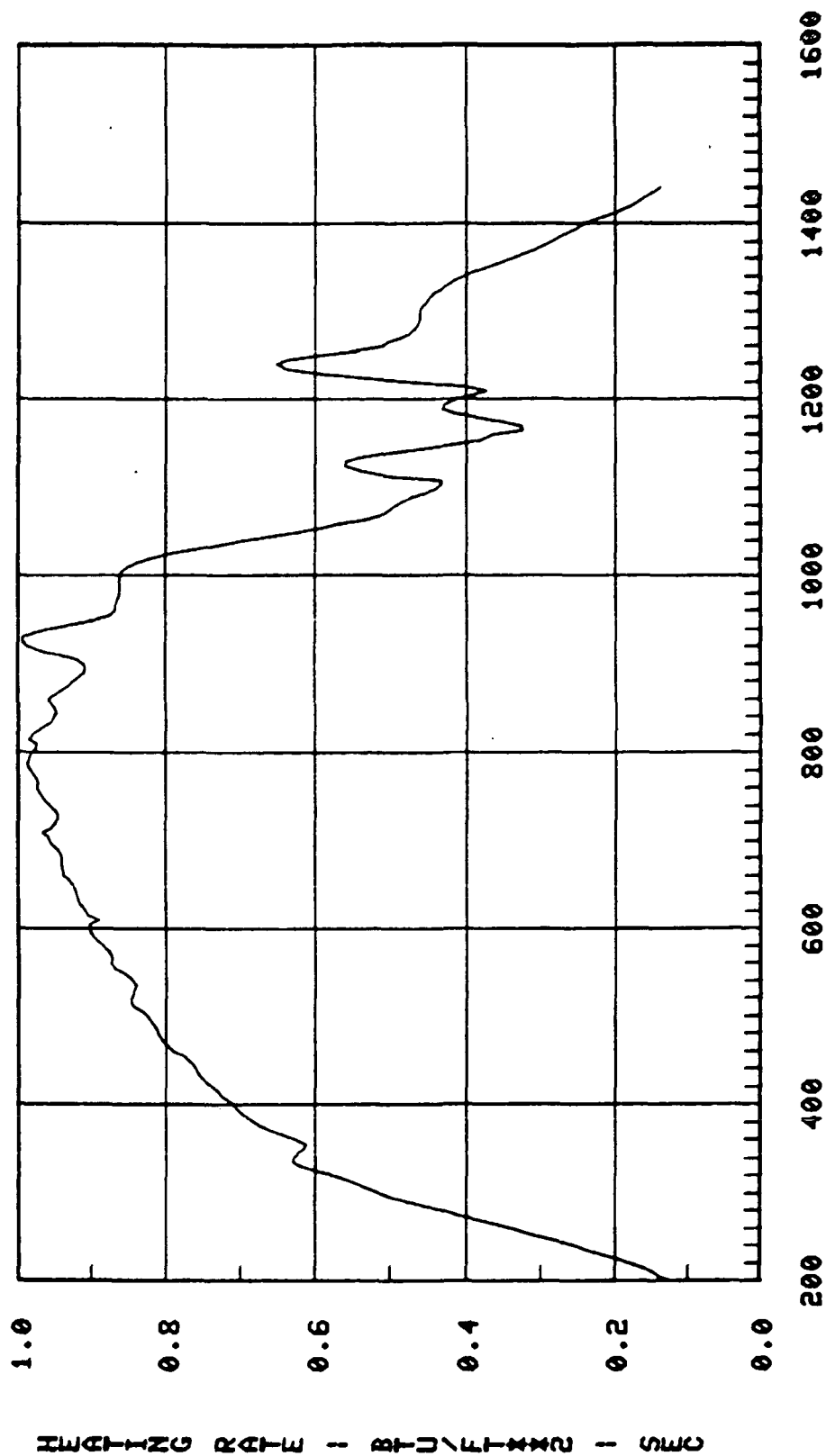
U07T9896A



01/11/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

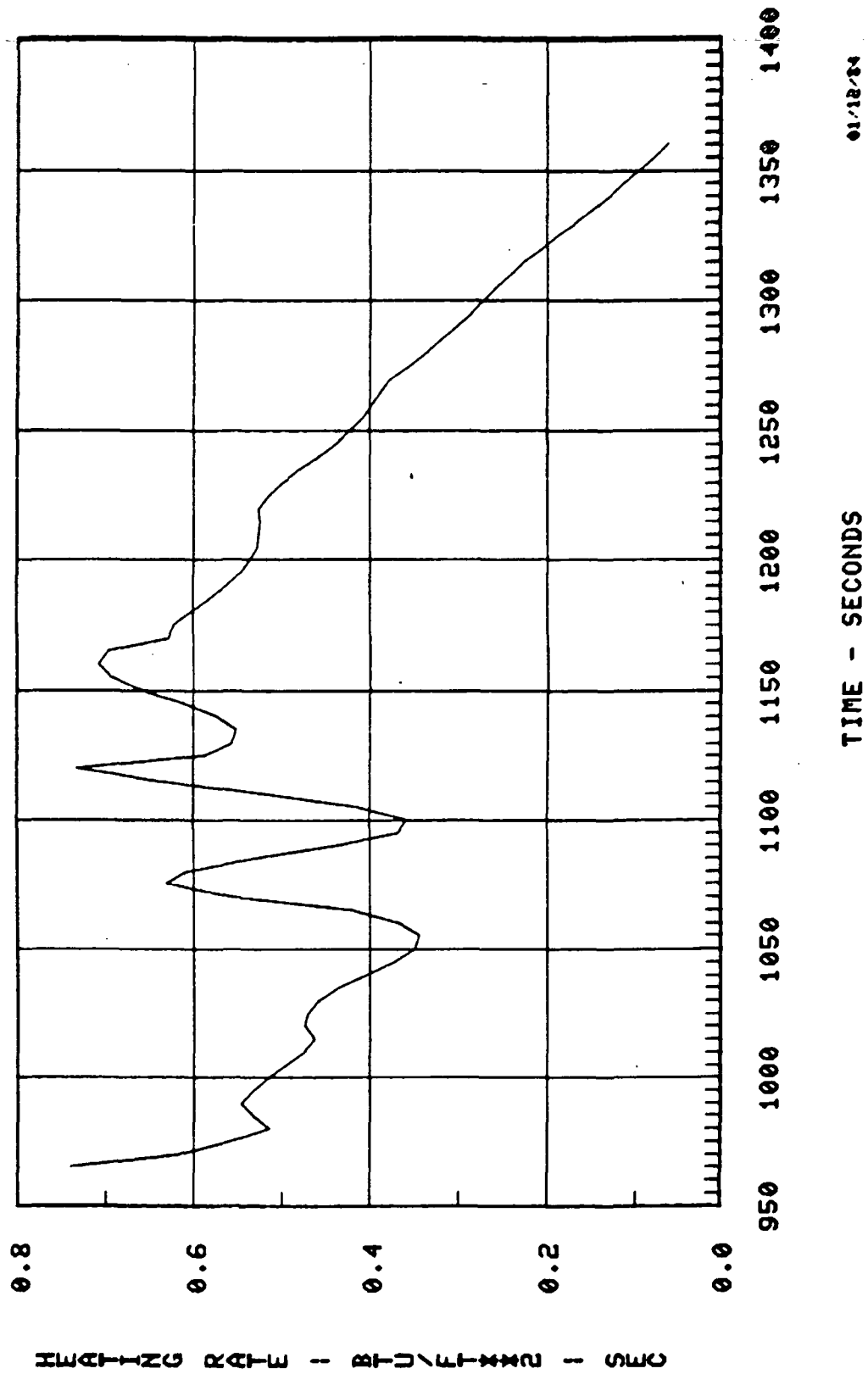
U07T9896A



01/11/84

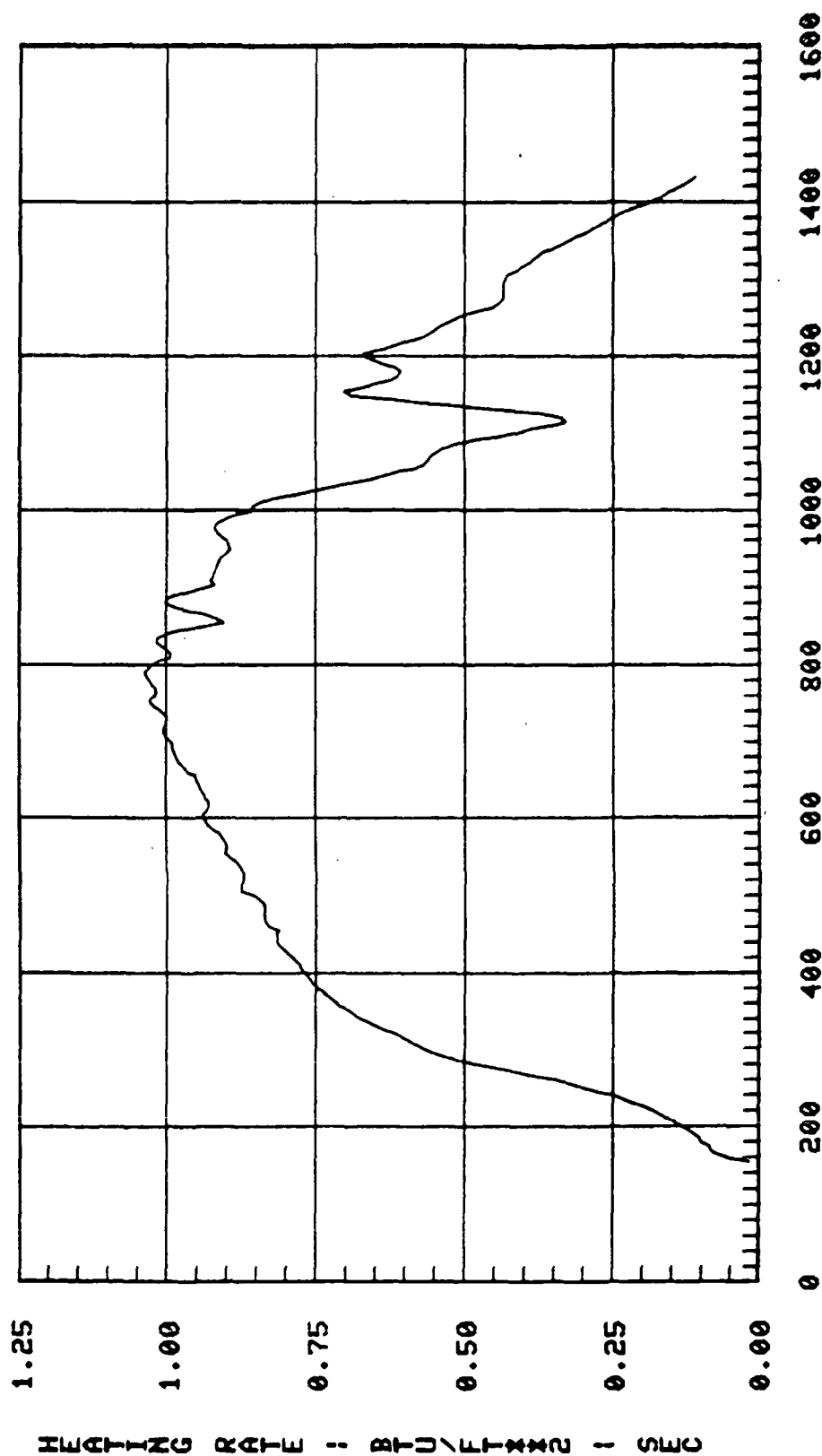
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A



# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.35$ ) $Z=400$

U07T9896A



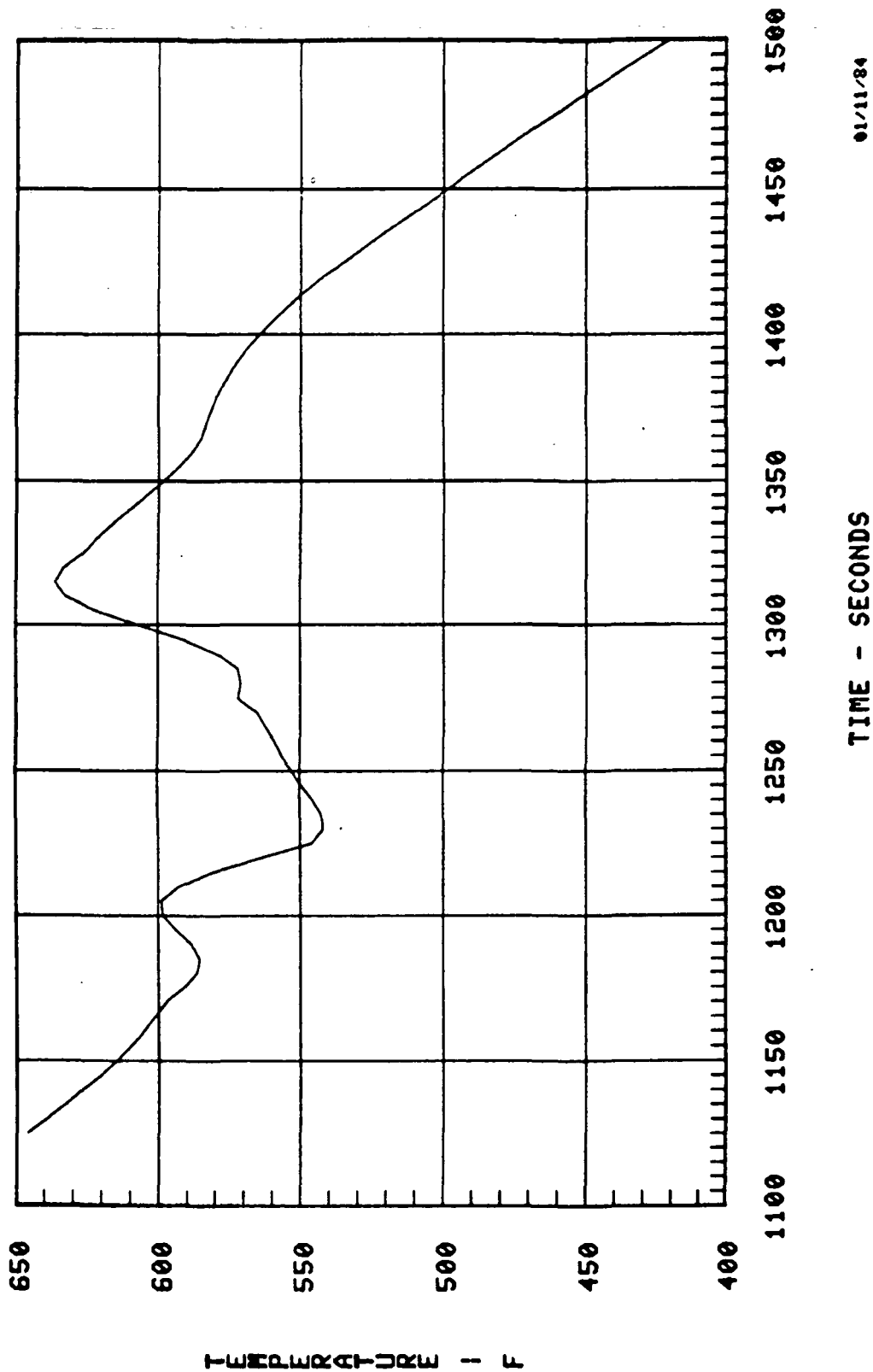
TIME - SECONDS

01/12/84



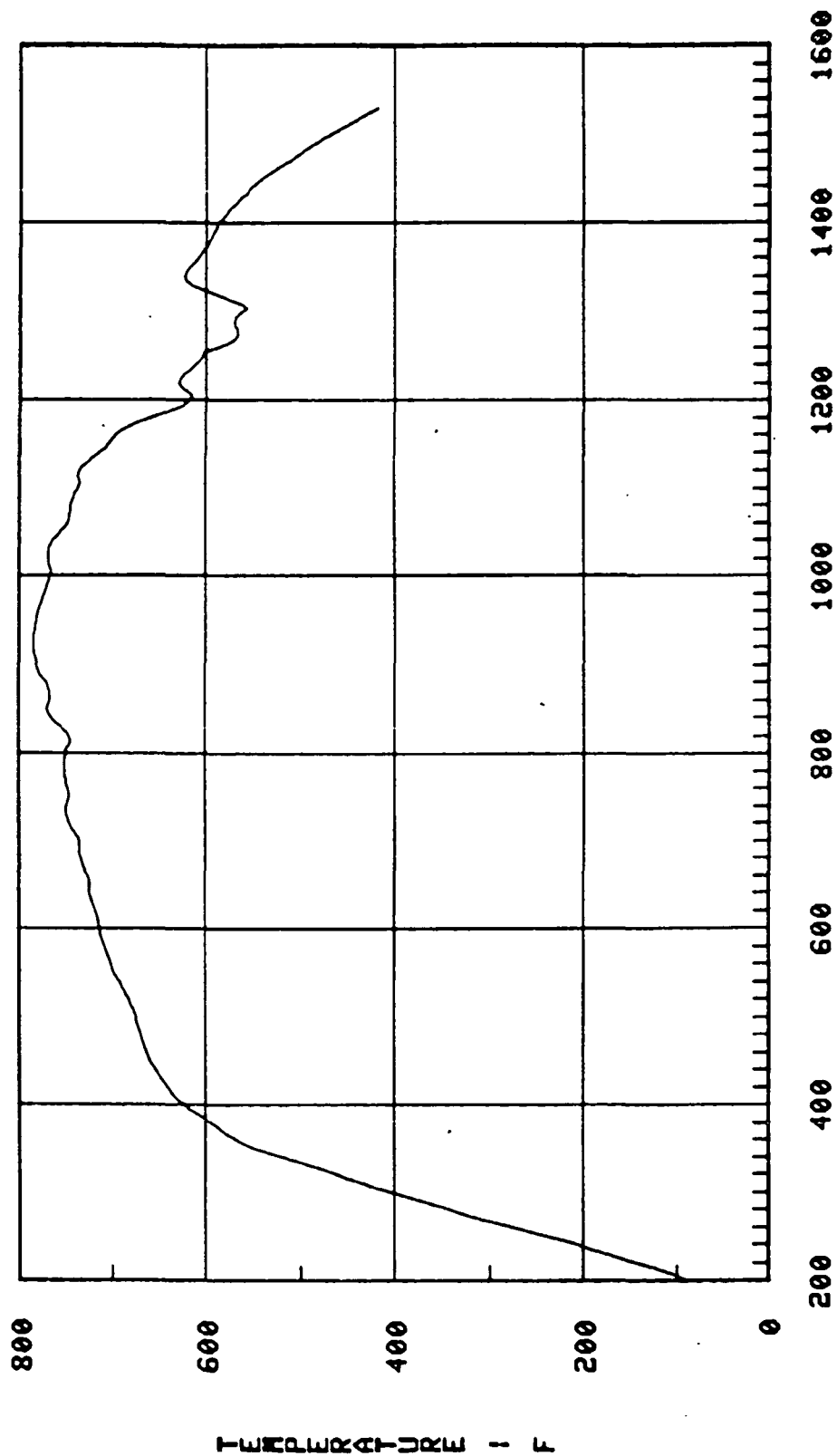
STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A



STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.35$ ) Z=400

U07T9896A

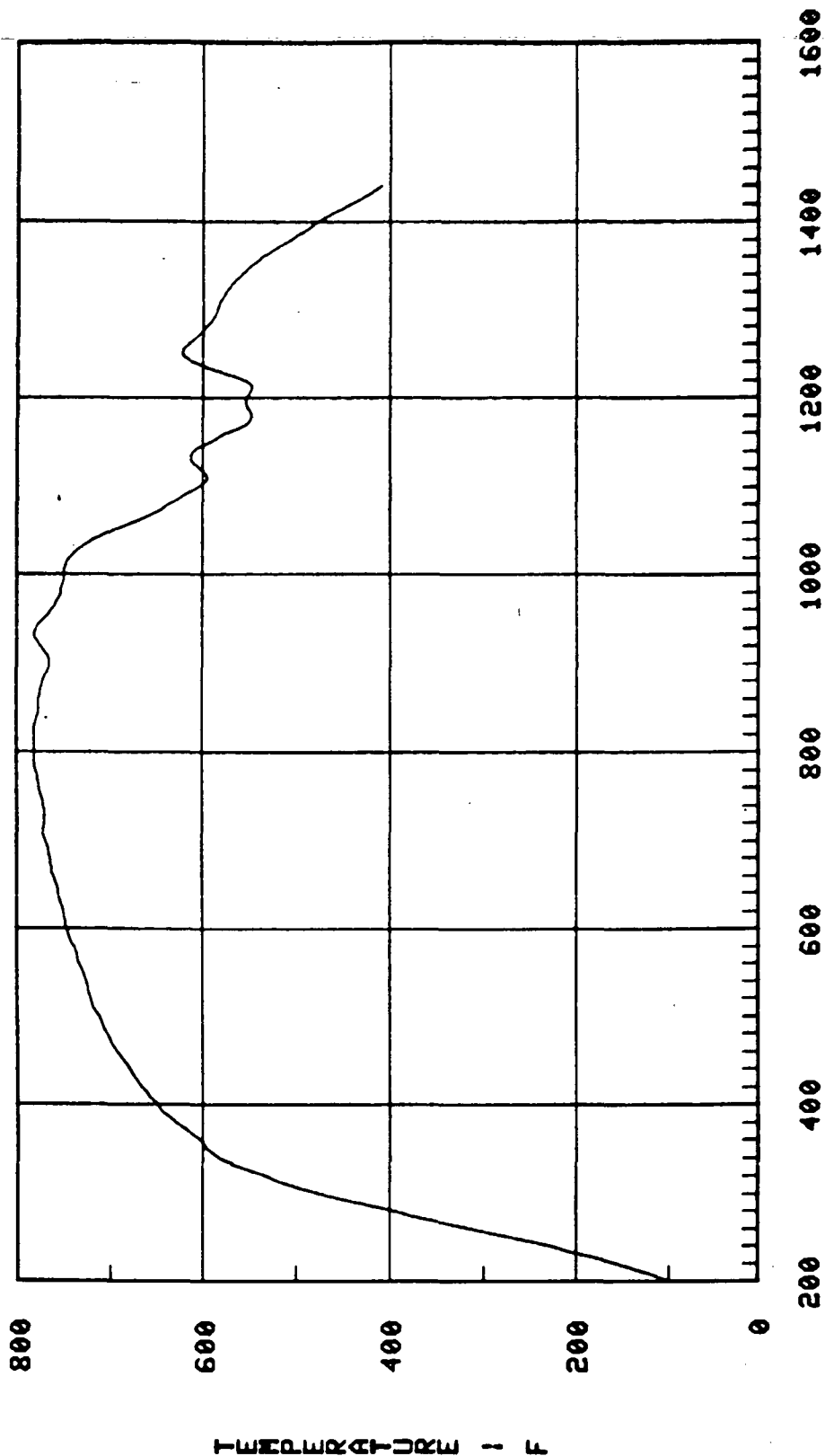


TIME - SECONDS

01/11/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A

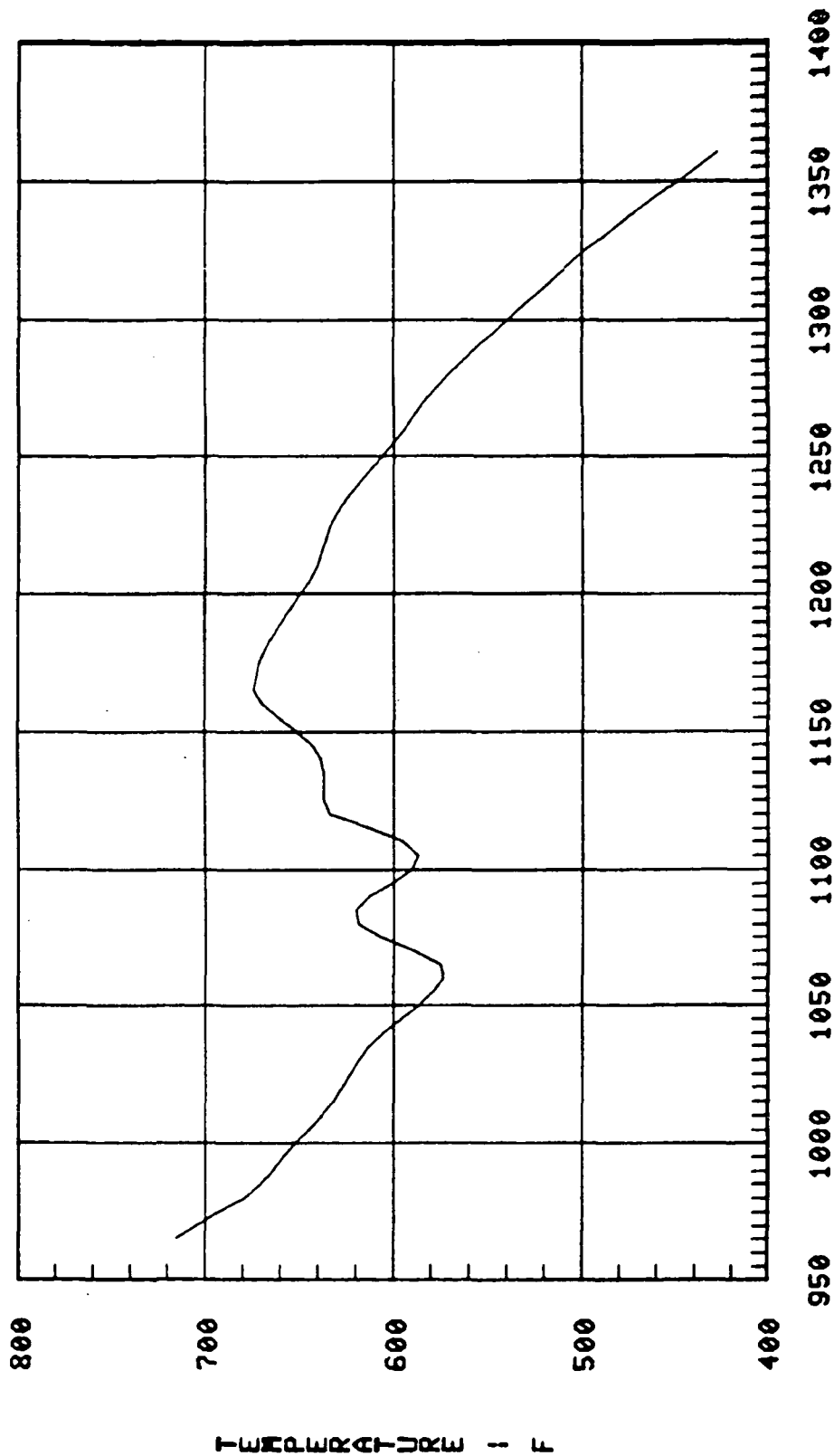


TIME - SECONDS

01/11/84

STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A

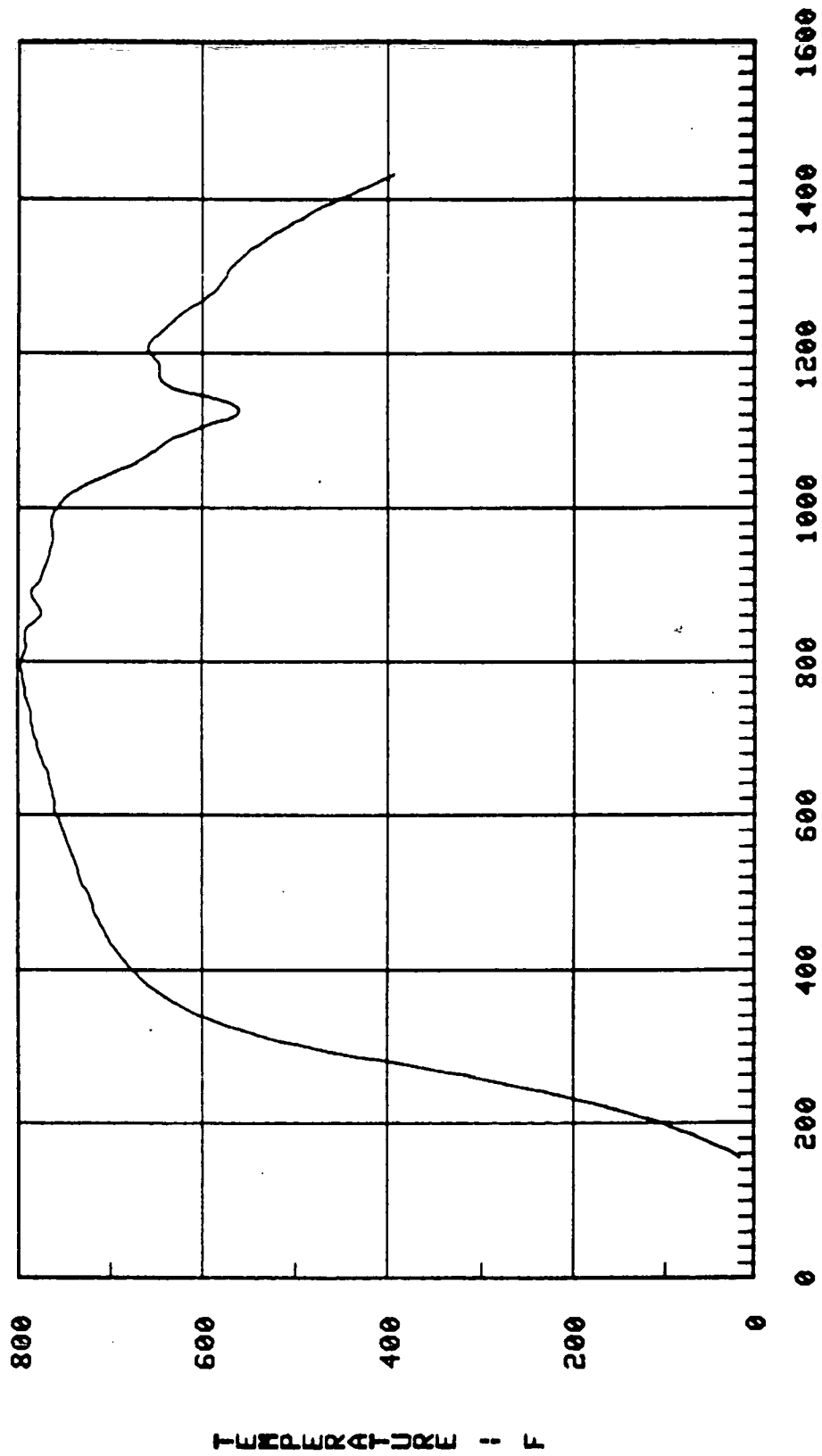


01/12/84

TIME - SECONDS

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.35$ )  $Z=400$

U07T9896A



01/12/84

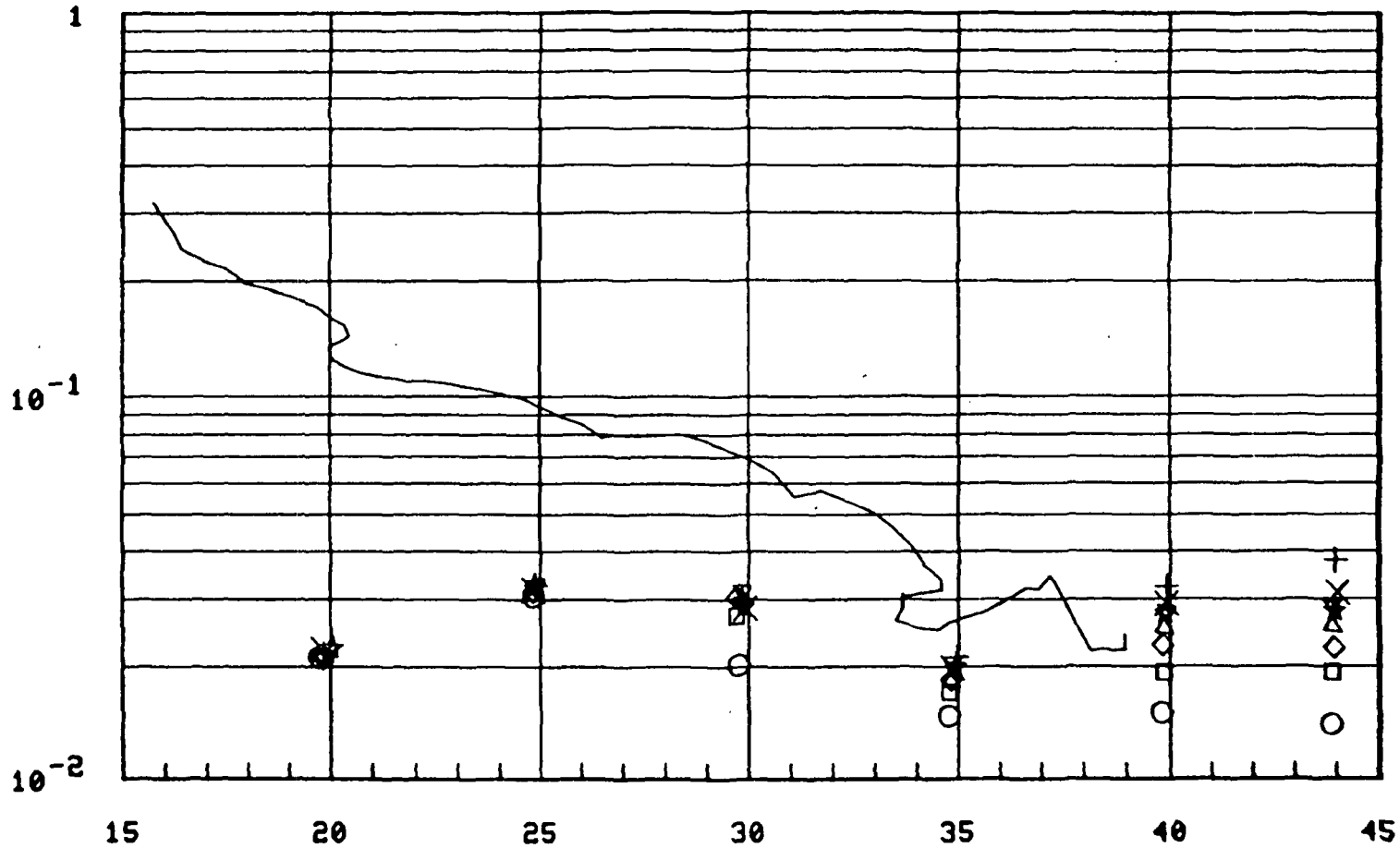
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

O  
□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9897A/H-REF 1065-1500 SEC

FILE COWELL - F/H-8000



B-101

ANGLE-OF-ATTACK - DEG

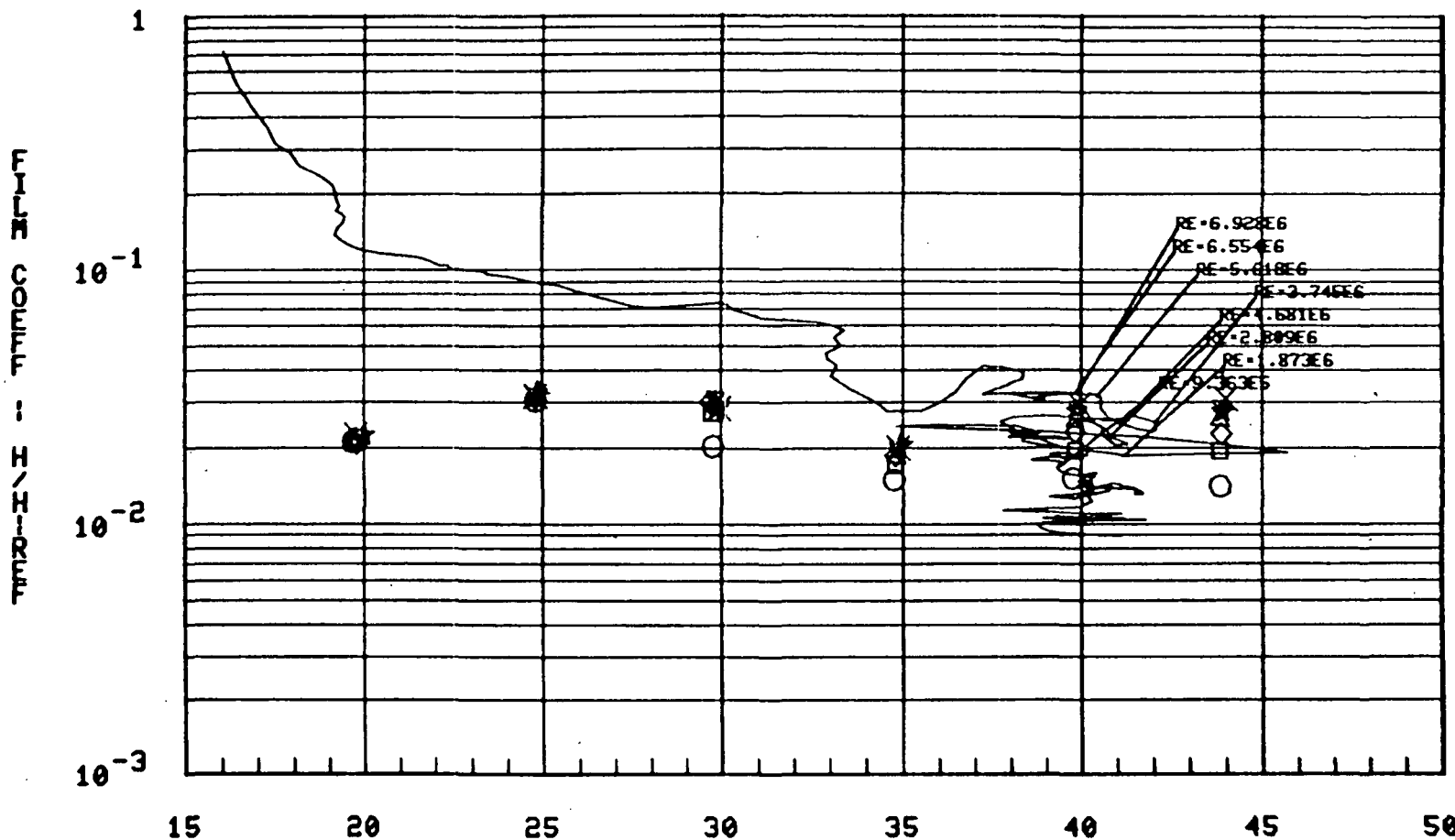
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS X/L=0.40) Z=400

O  
 □  
 △  
 ×  
 +  
 X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9897A/H-REF 200-1530 SEC



B-102

ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 27550236.000 SEC.

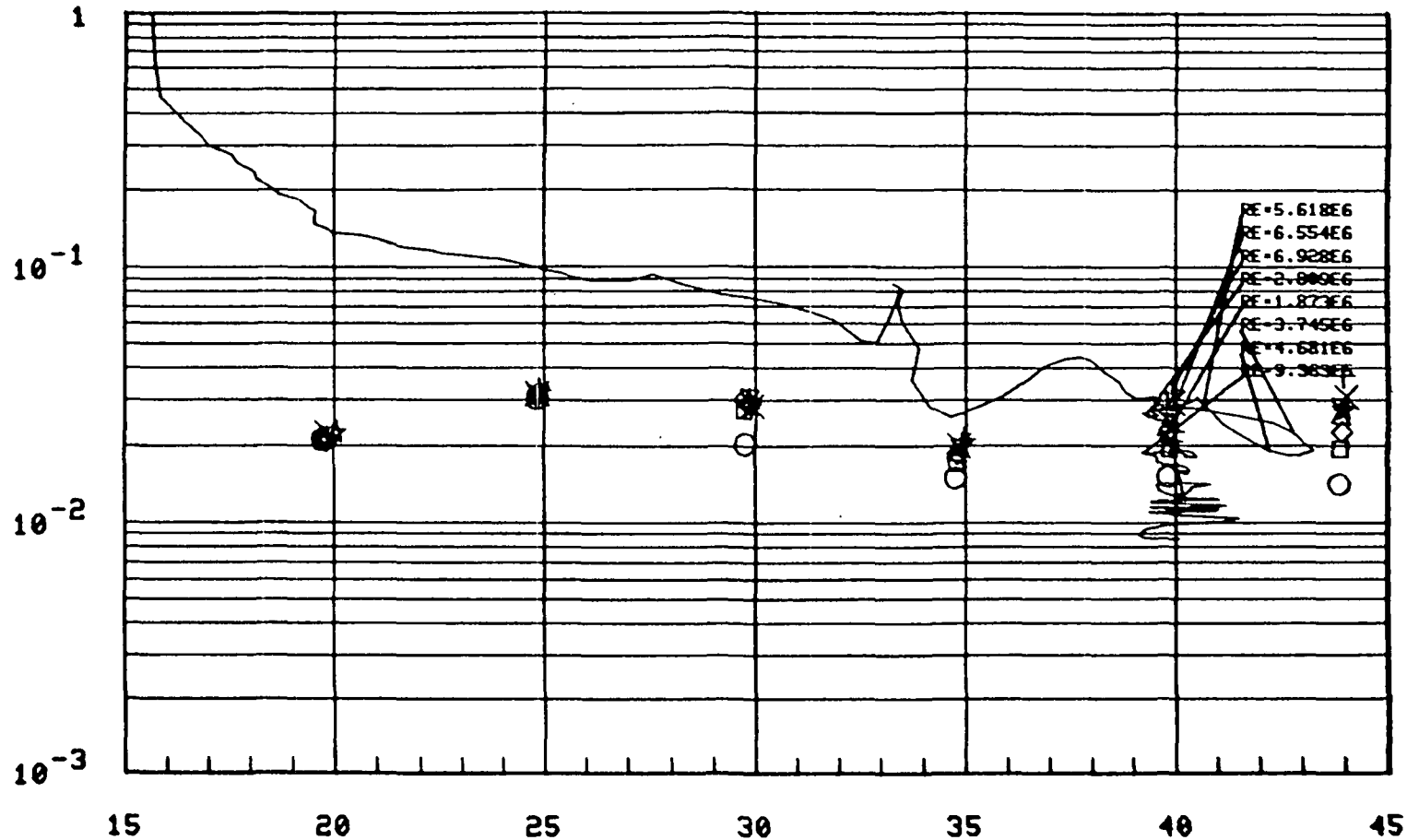
# STS-3 (107 FT LENGTH SIDE FUS X/L=0.40) Z=400

○◇△★+X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9897A/H-REF 200-1440 SEC

WALL COEFF - I/I-COEF



ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 07745684.000 SEC.



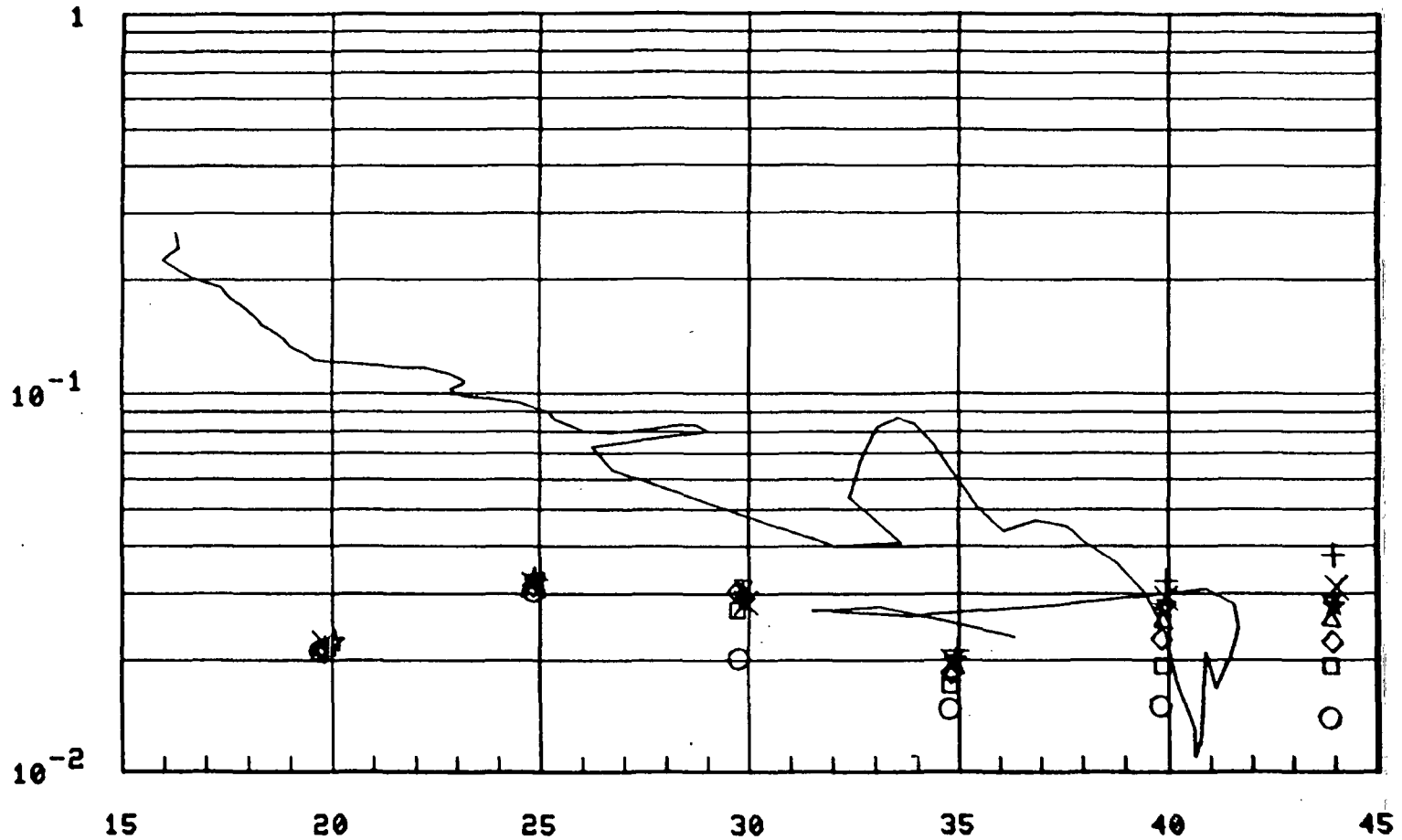
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9897A/H-REF 965-1360 SEC

O  
□  
△  
+  
X

LINE COUNT - I/I-REF



B-104

ANGLE-OF-ATTACK - DEG

01/18/84  
 BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

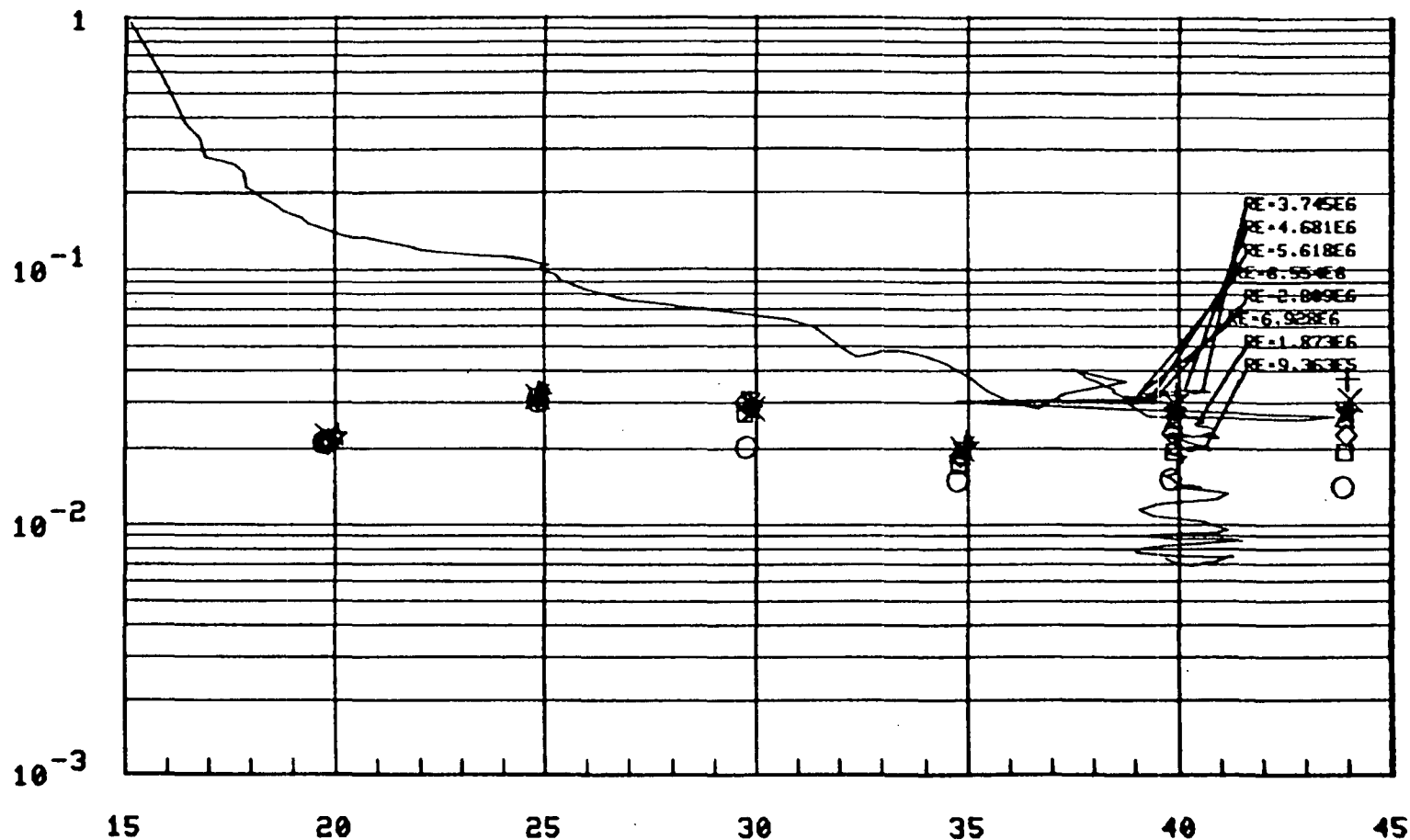
OXOXΔ+X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9897A/H-REF 150-1430 SEC

LINE COUNT -- H/E--REF

B-105

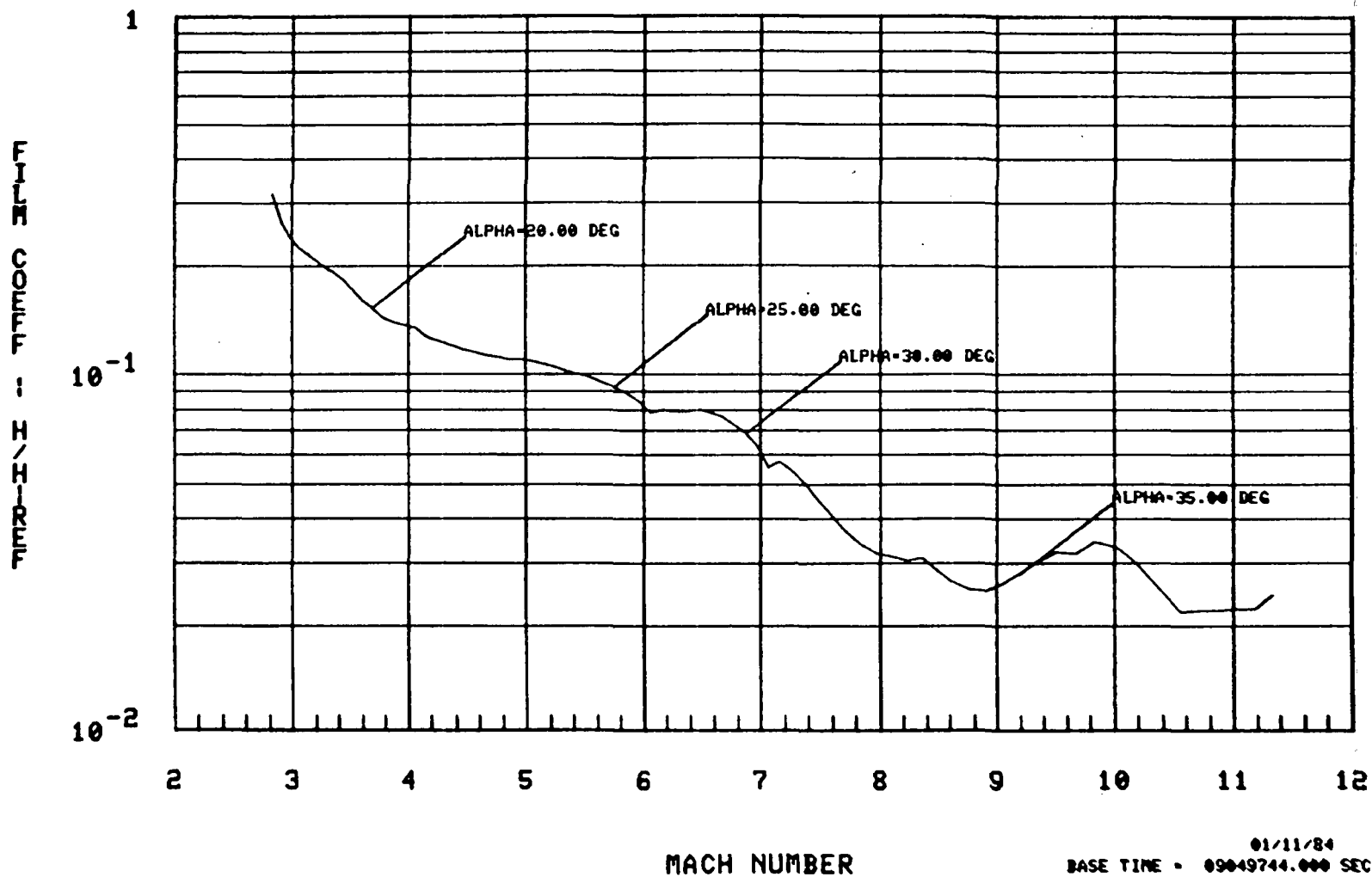


ANGLE-OF-ATTACK - DEG

01/12/84  
 BASE TIME = 27698591.000 SEC.

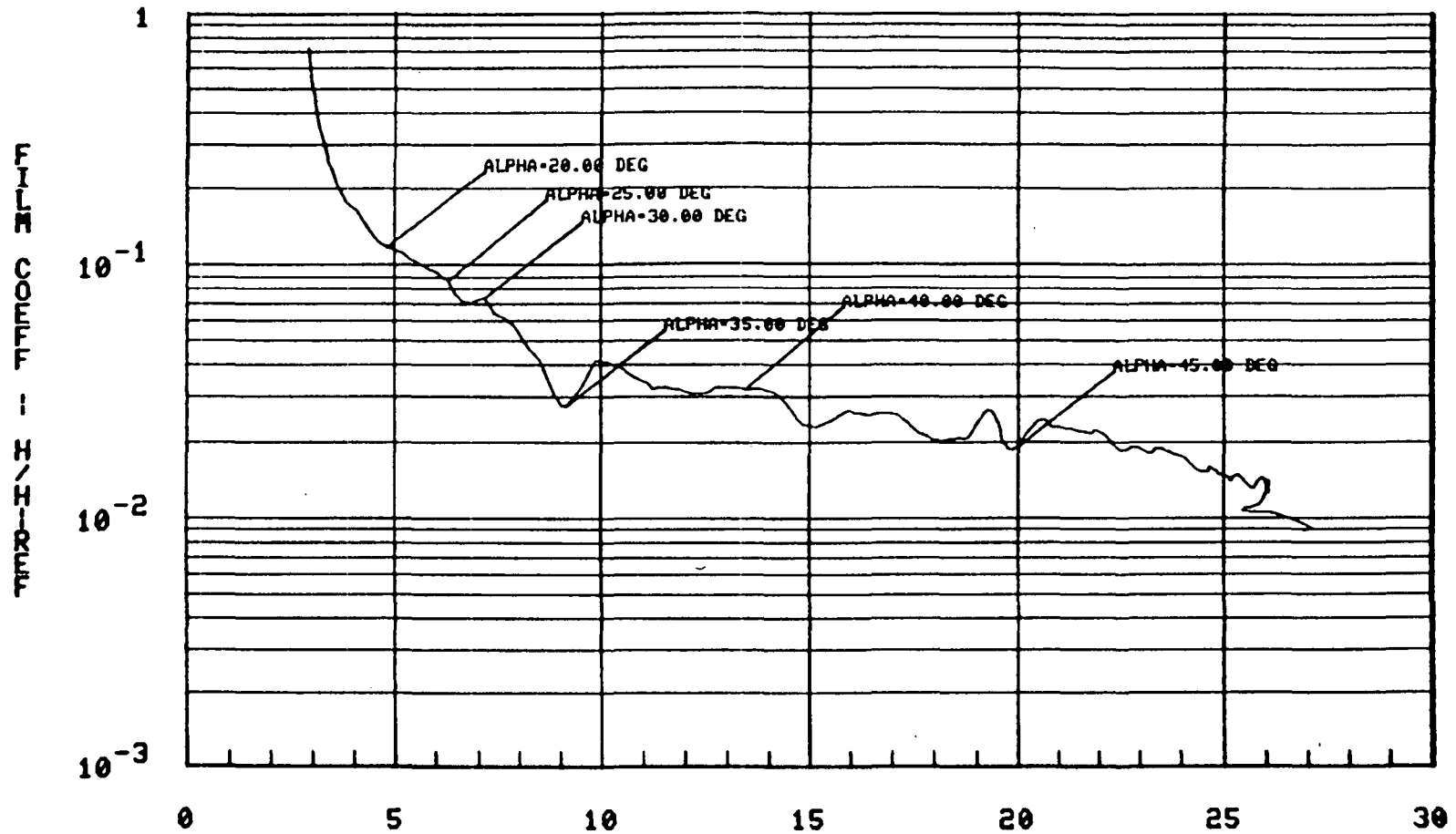
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

U07T9897A/H-REF 1065-1500 SEC



STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

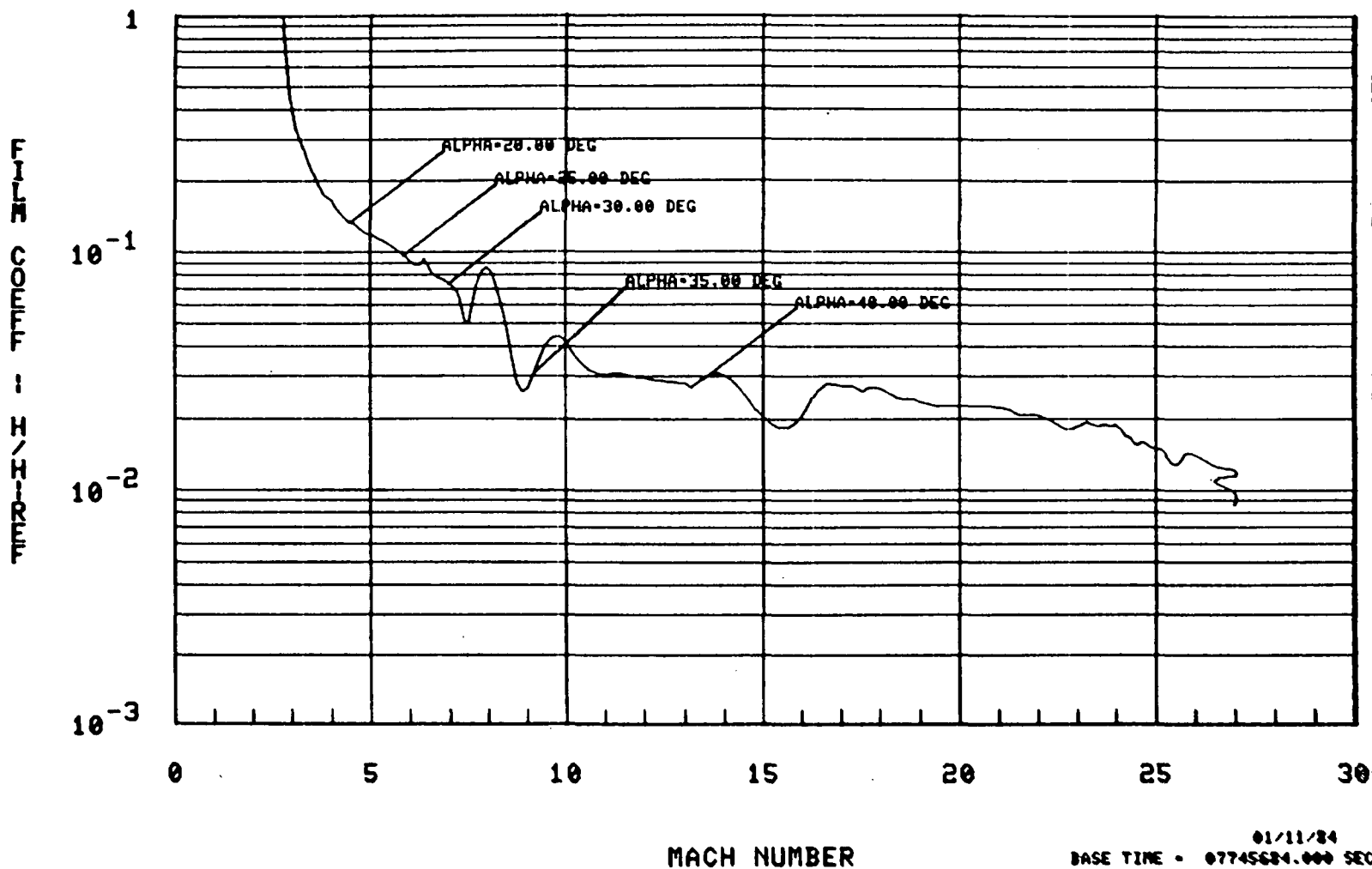
U07T9897A/H-REF 200-1530 SEC



01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS X/L=0.40) Z=400

U07T9897A/H-REF 200-1440 SEC

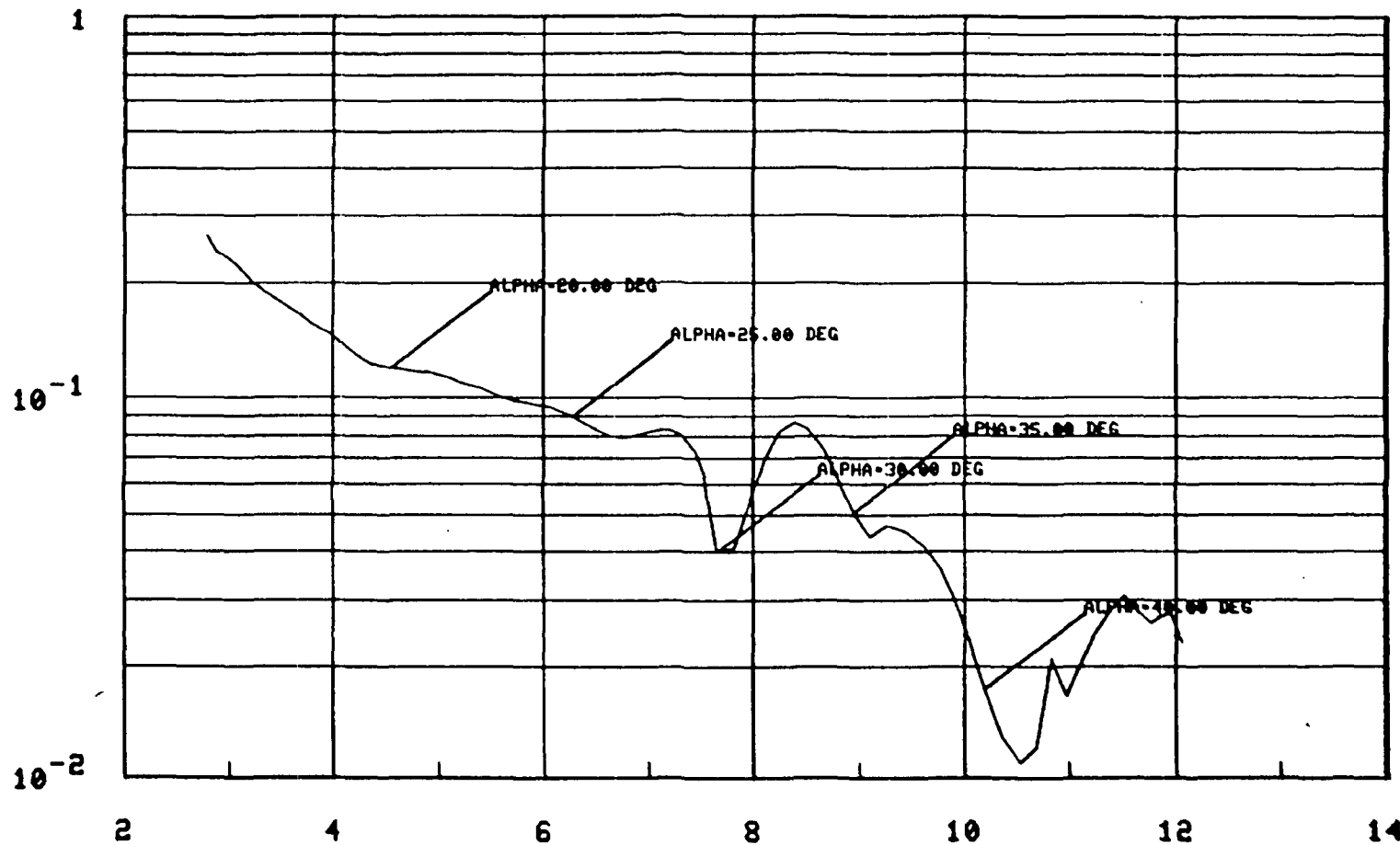


STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

U07T9897A/H-REF 965-1360 SEC

B-109

LINE COUNT - I/I-REF



MACH NUMBER

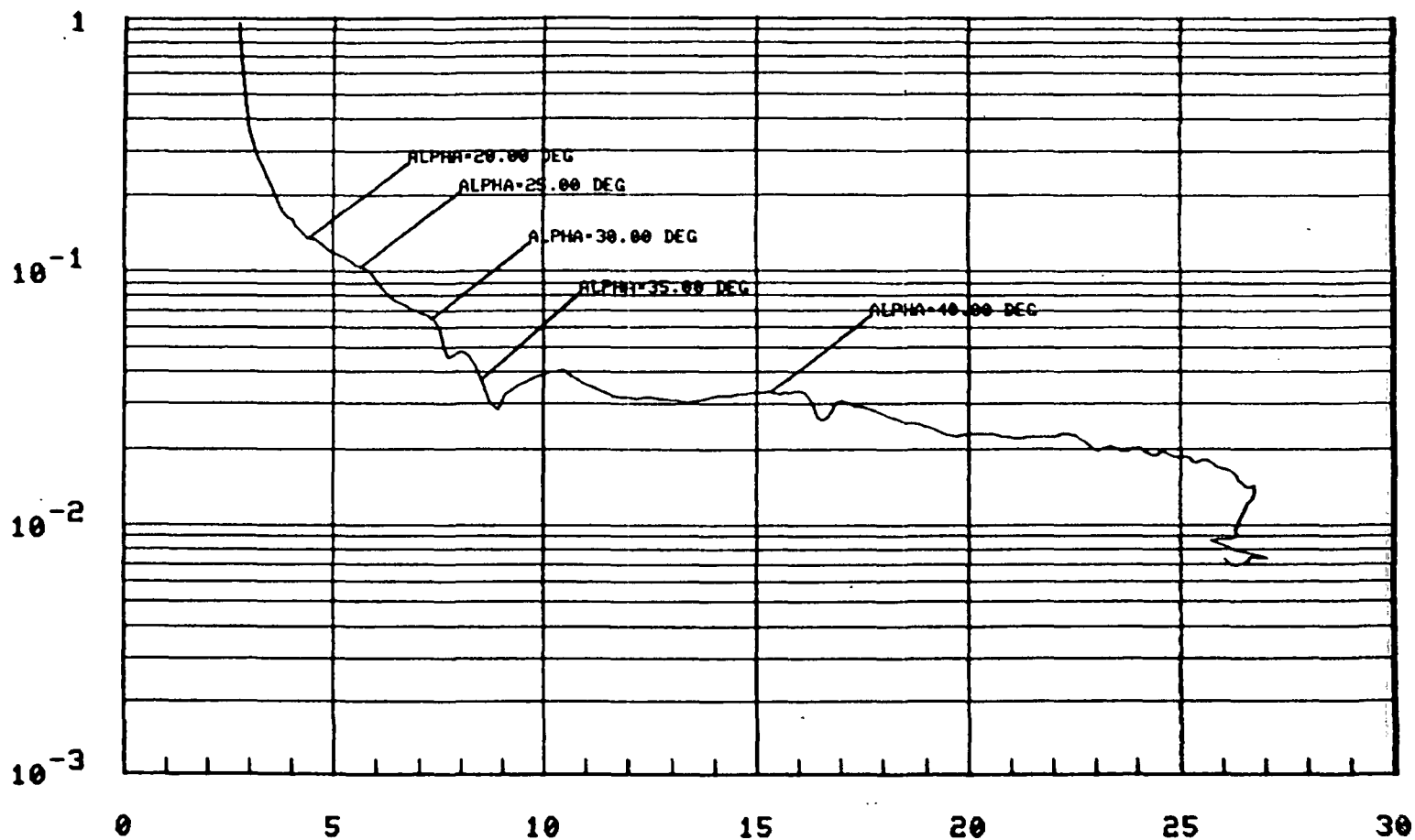
01/18/84  
BASE TIME = 10000423.000 SEC.

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

U07T9897A/H-REF 150-1430 SEC

B-110

LINE COEFF - H/H-REF



MACH NUMBER

01/12/84  
BASE TIME = 27698591.000 SEC.

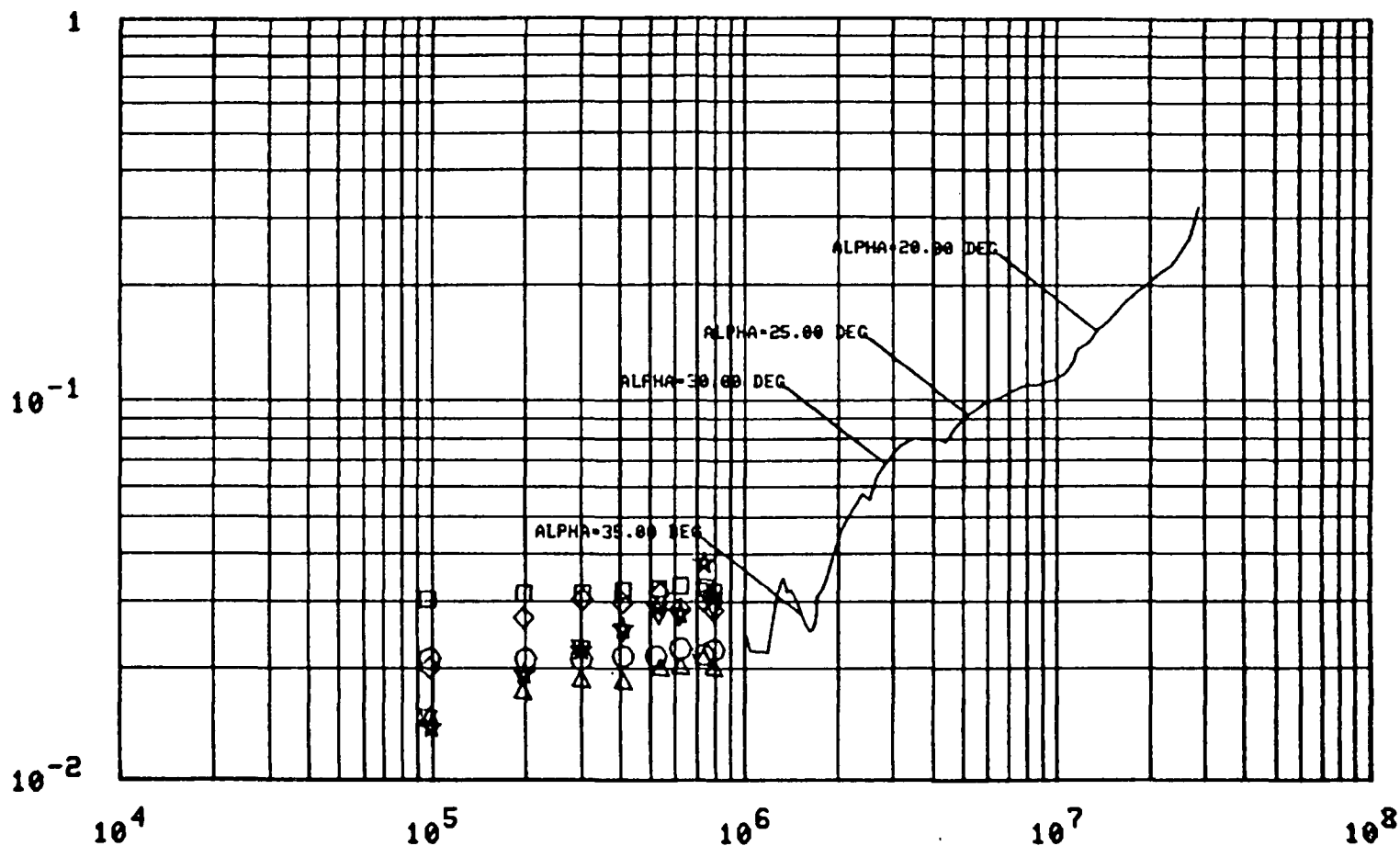
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9897A/H-REF 1065-1500 SEC

WING COEFF -  $C_{L}/C_{D}$



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 09049744.000 SEC.

B-111

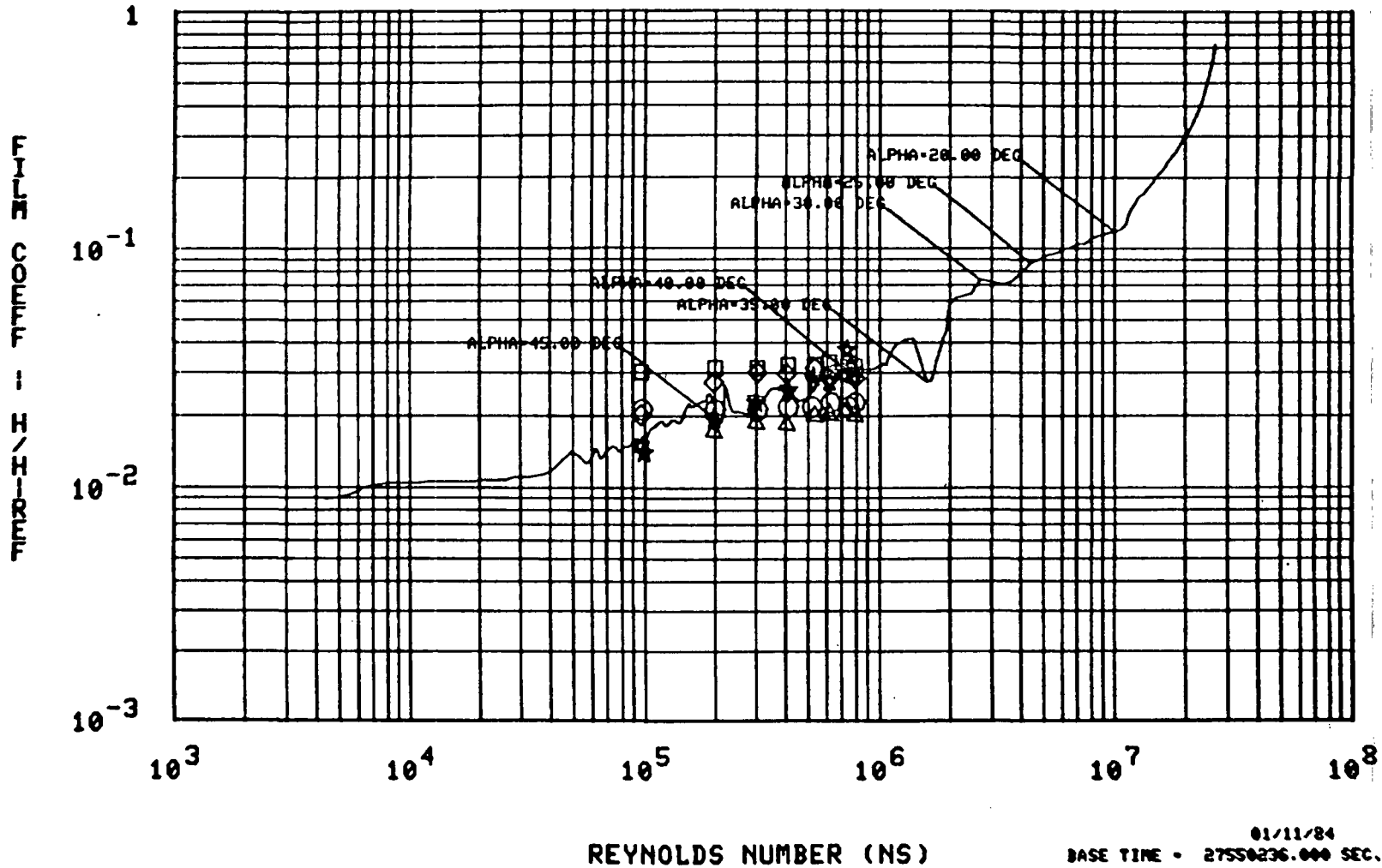


# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

○  
◇  
△  
▽  
×

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9897A/H-REF 200-1530 SEC



B-112

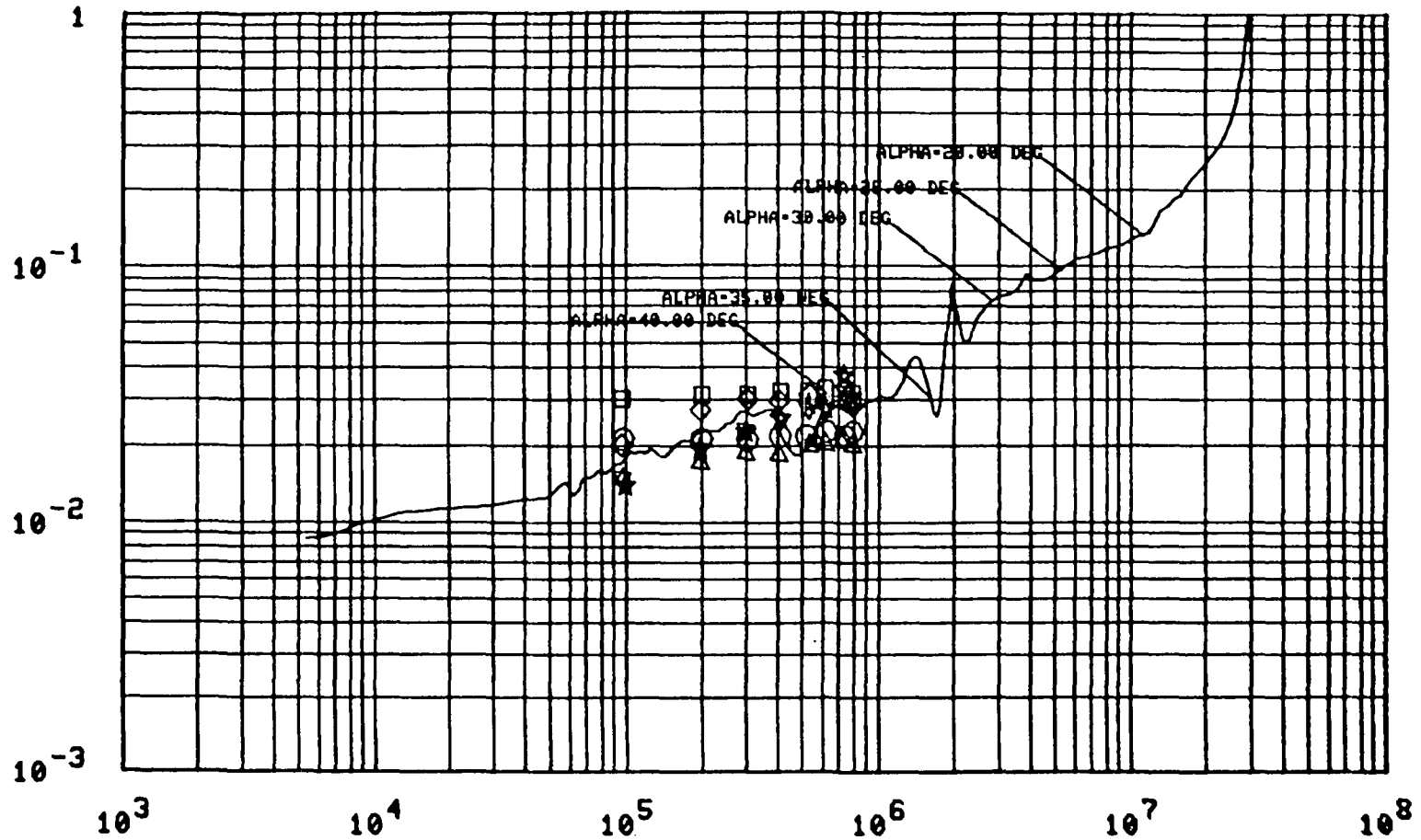
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

○  
□  
◇  
△  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9897A/H-REF 200-1440 SEC

LINE COUNT - 111-0000



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 07745624.000 SEC.

B-113

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.40$ ) $Z=400$

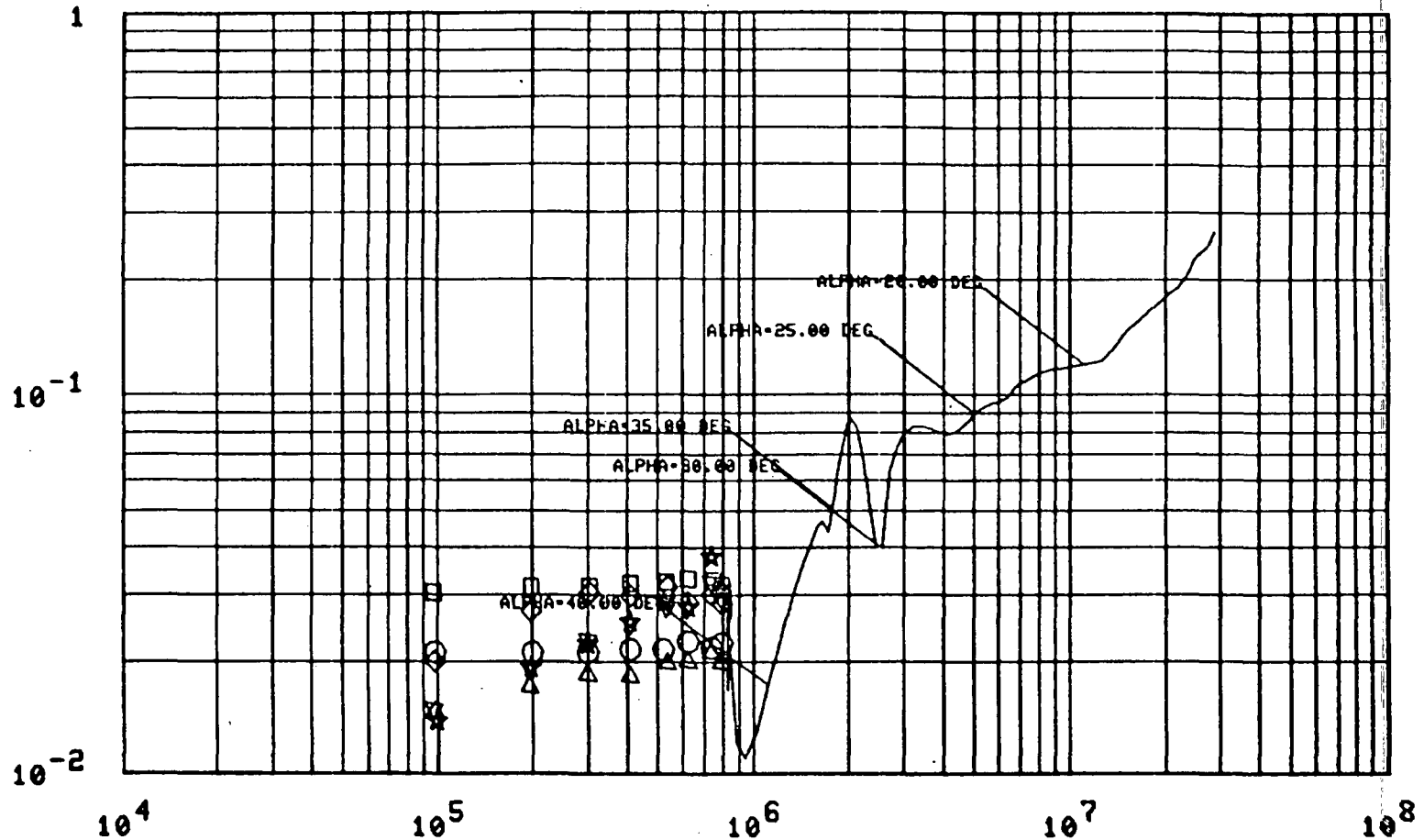
○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9897A/H-REF 965-1360 SEC

LINE COUL - I/I-CUL

B-114



REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 16040423.000 SEC.

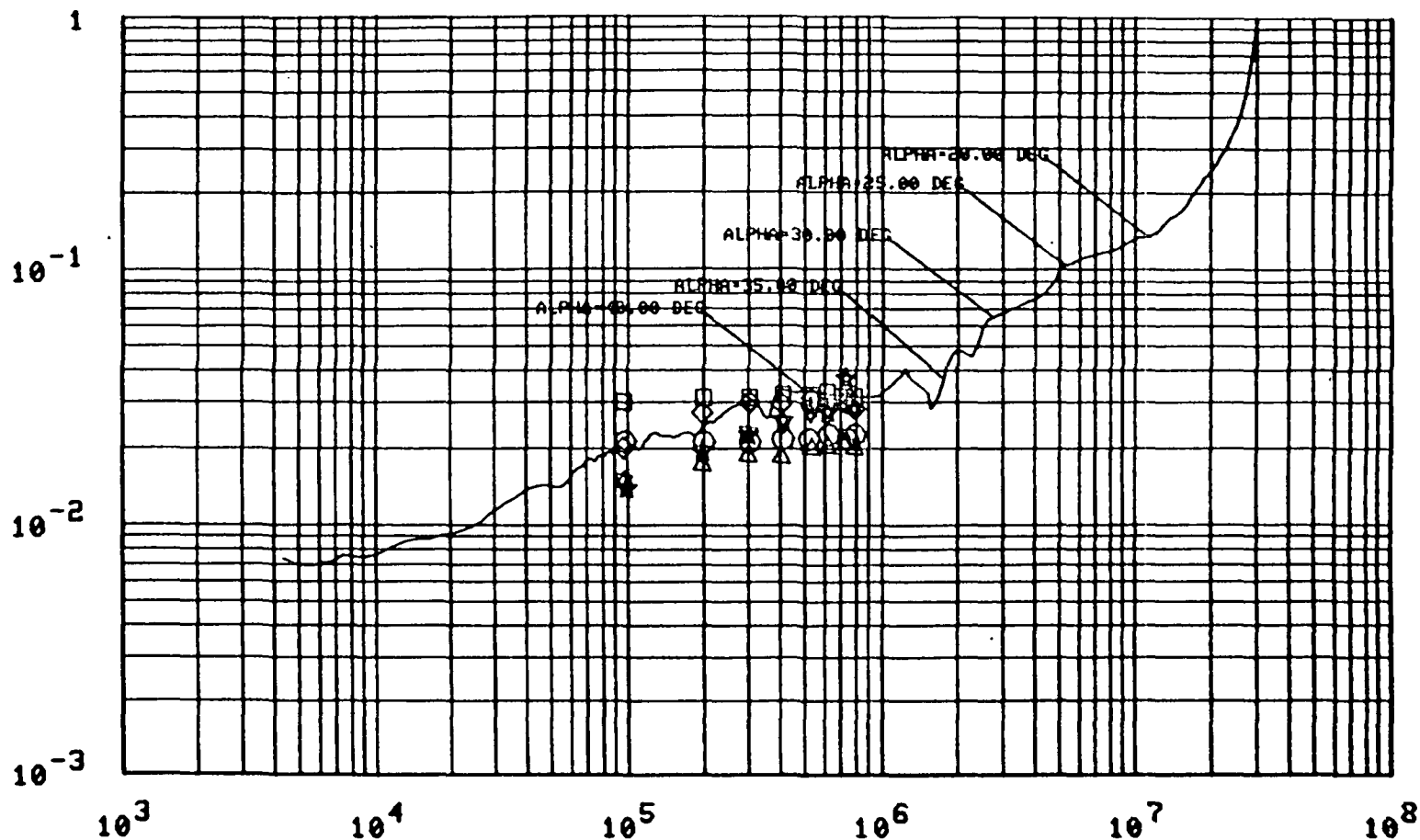
STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9897A/H-REF 150-1430 SEC

TIME CORRECTED - I/I-REF



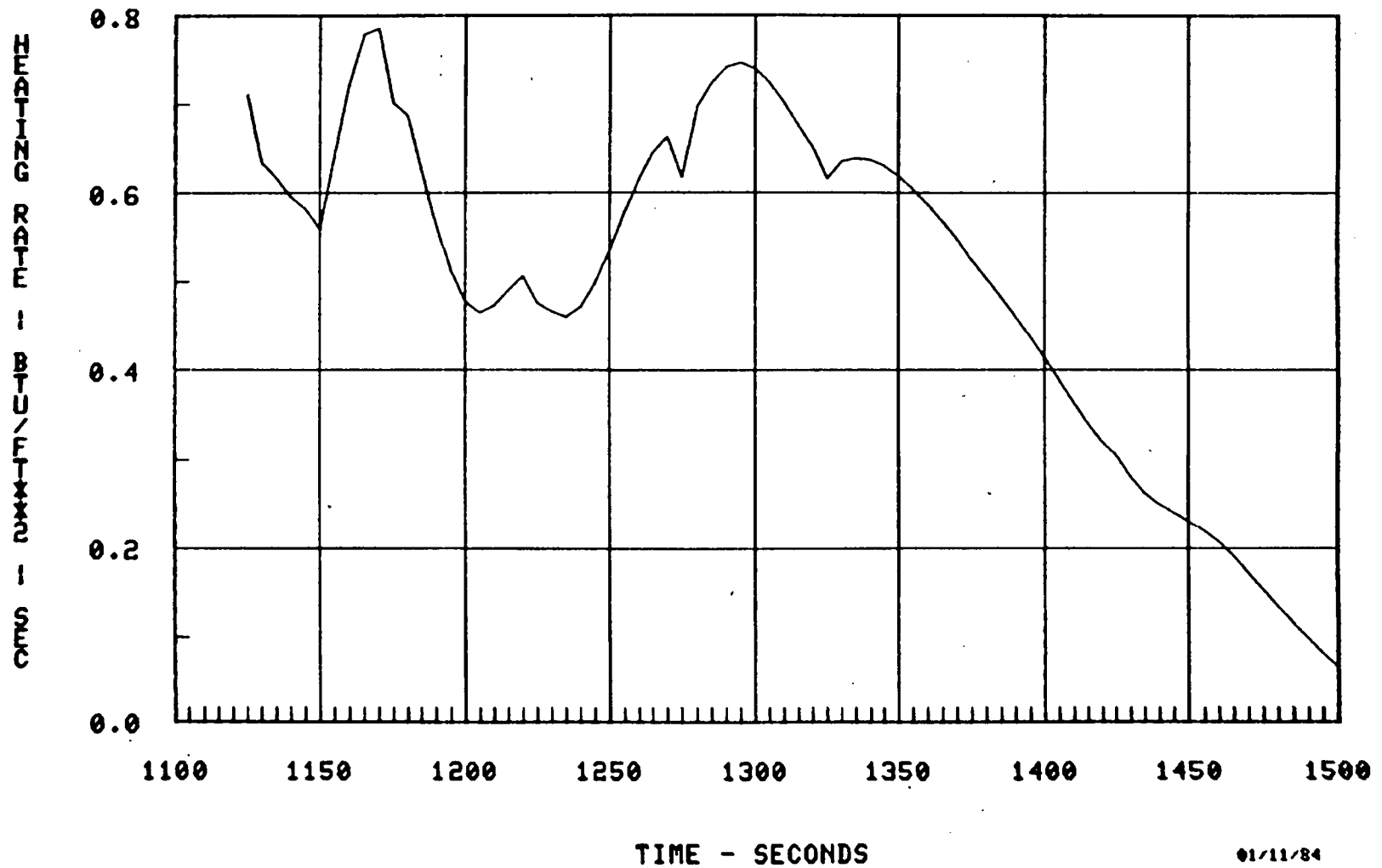
REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

B-115

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

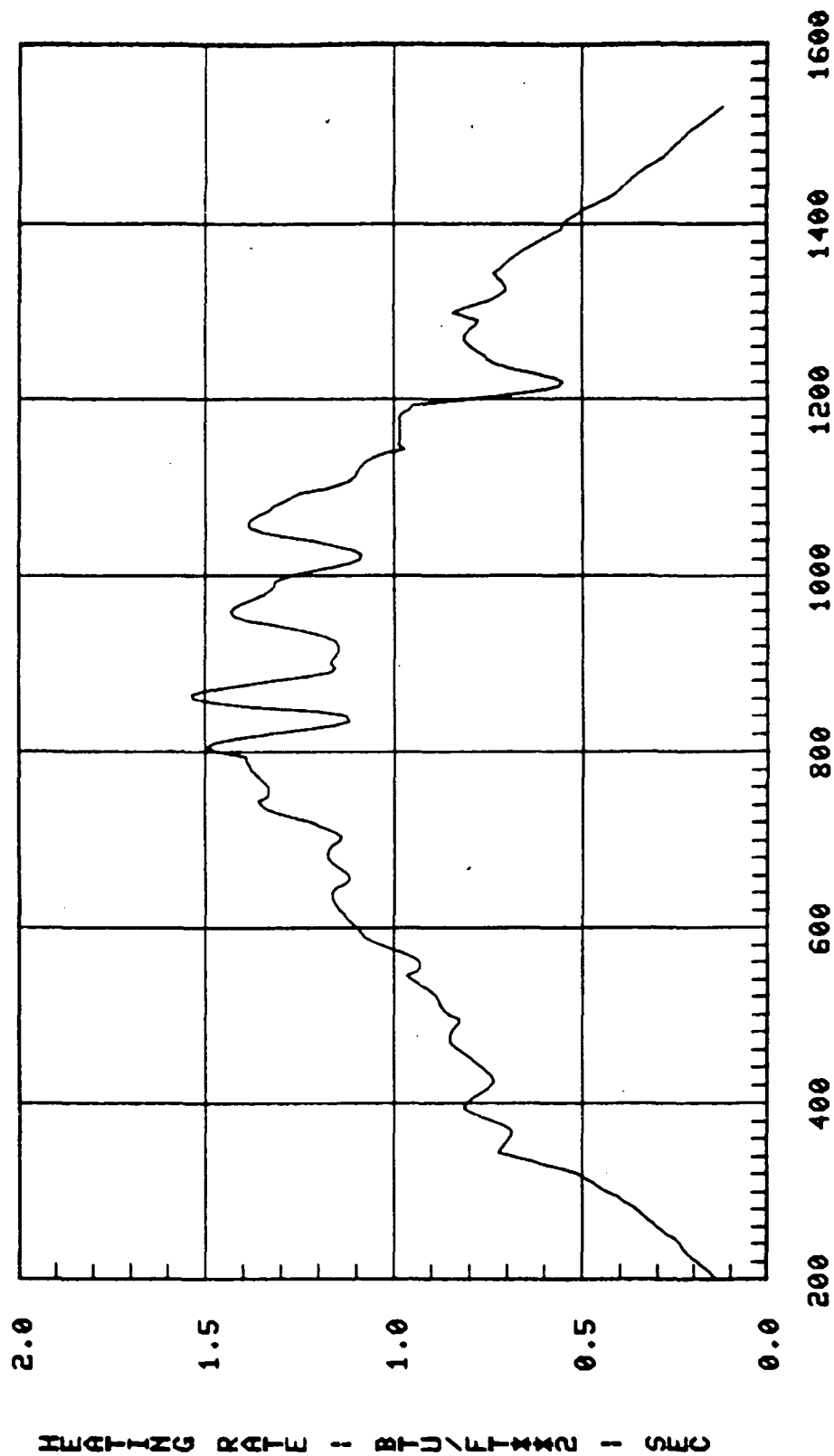
U07T9897A



B-116

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

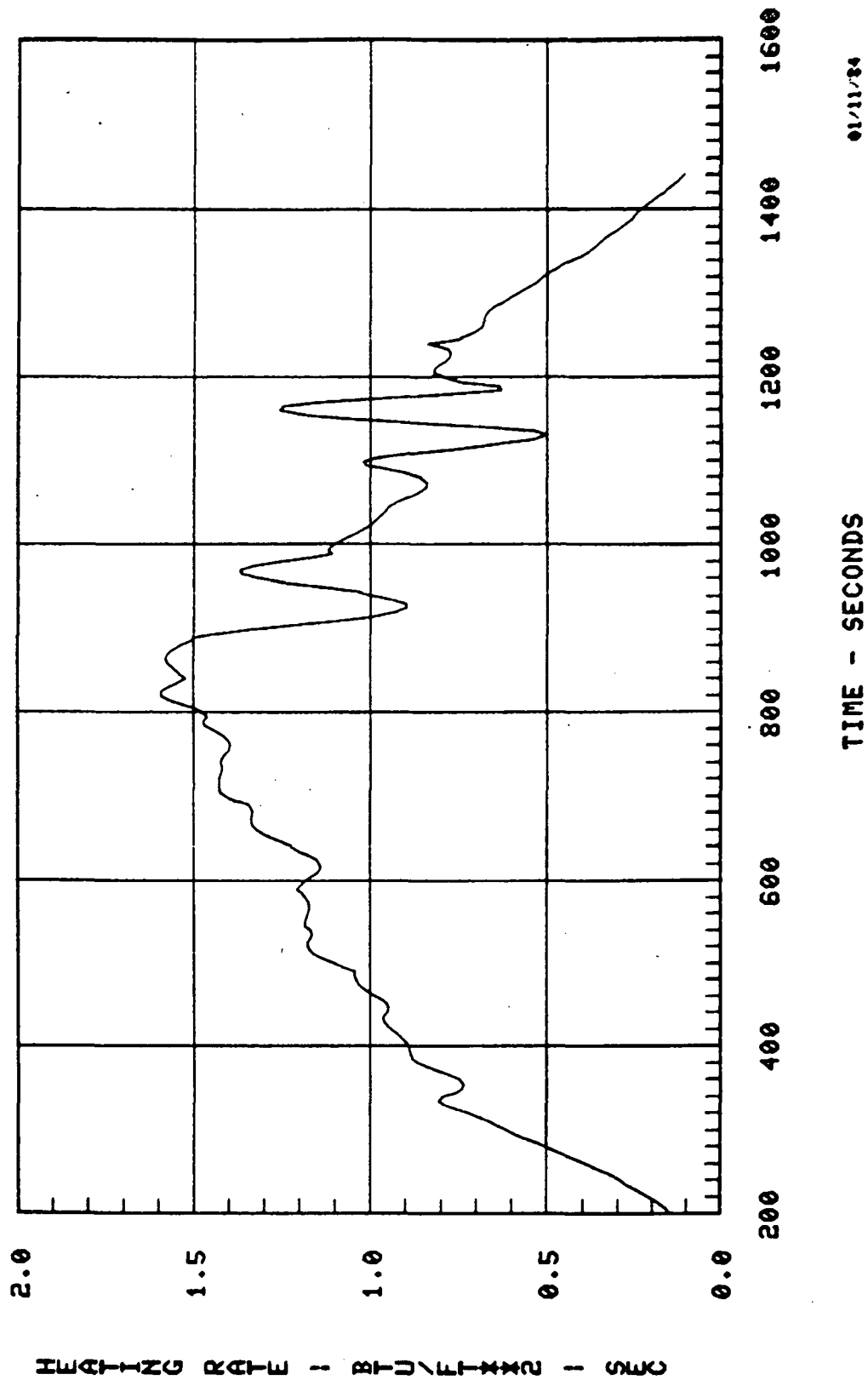
U0779897A



01/11/84

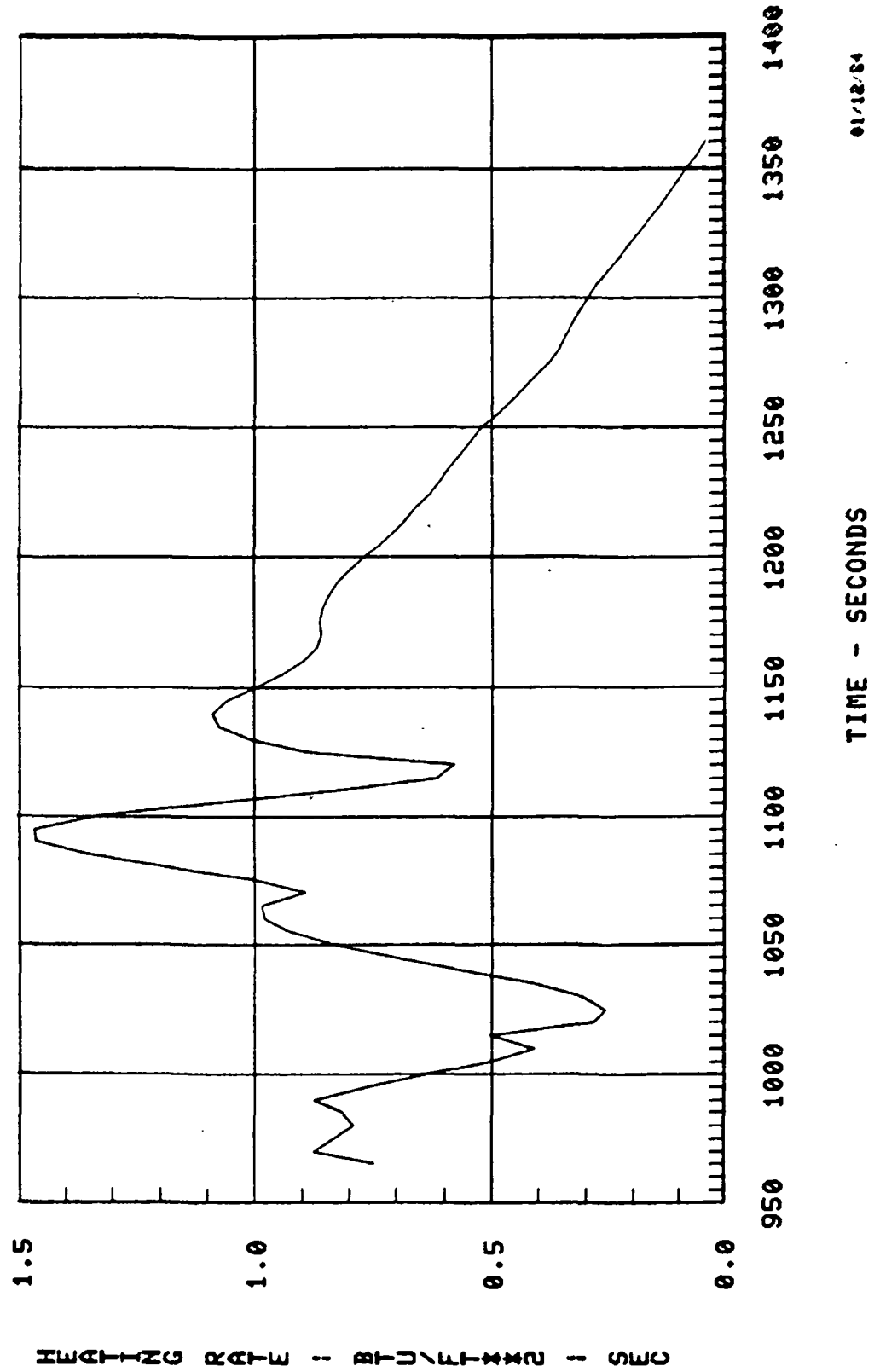
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

U07T9897A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.40$ ) Z=400

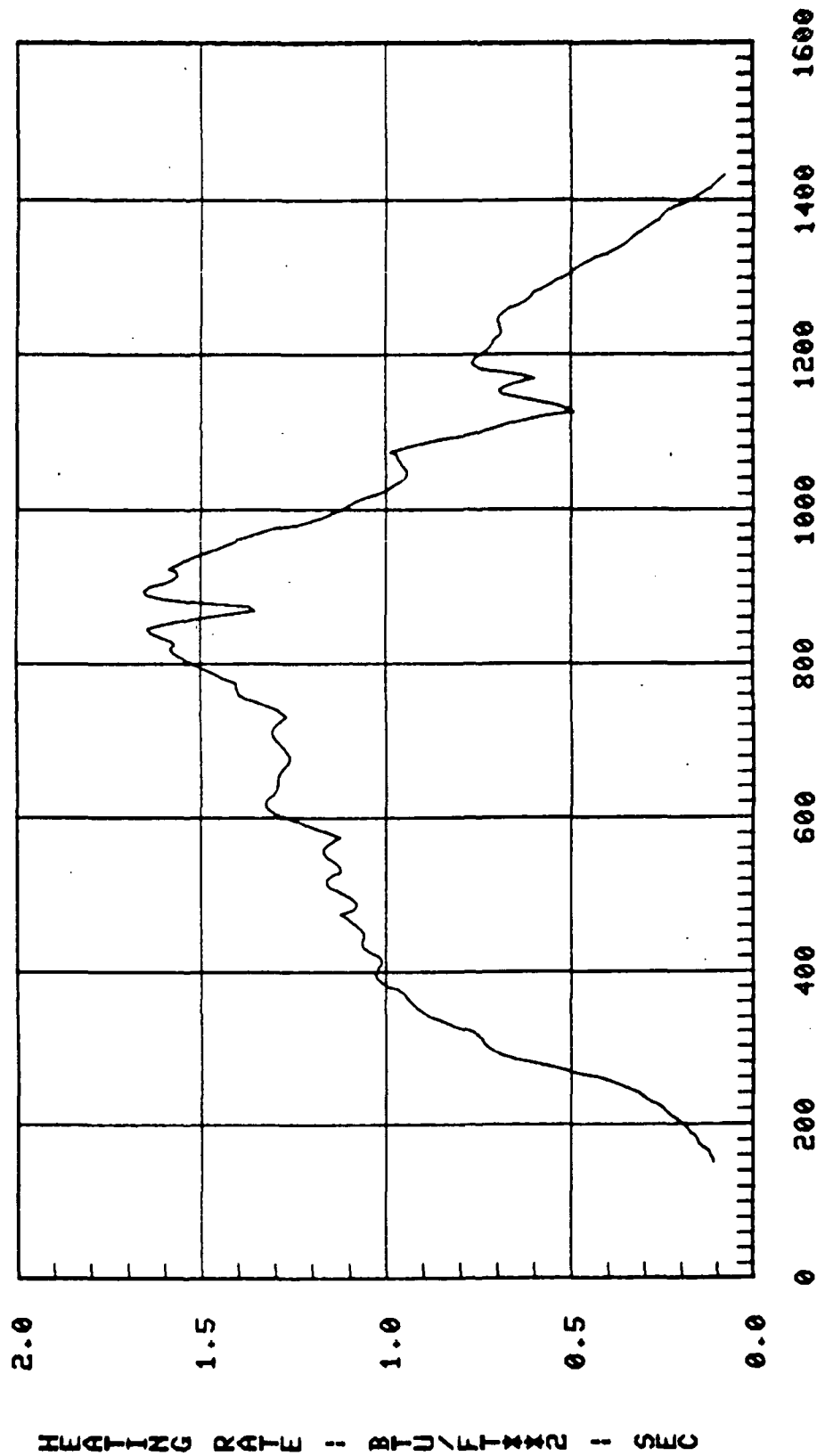
U07T9897A





STS-5 (107 FT LENGTH SIDE FUS X/L=0.40) Z=400

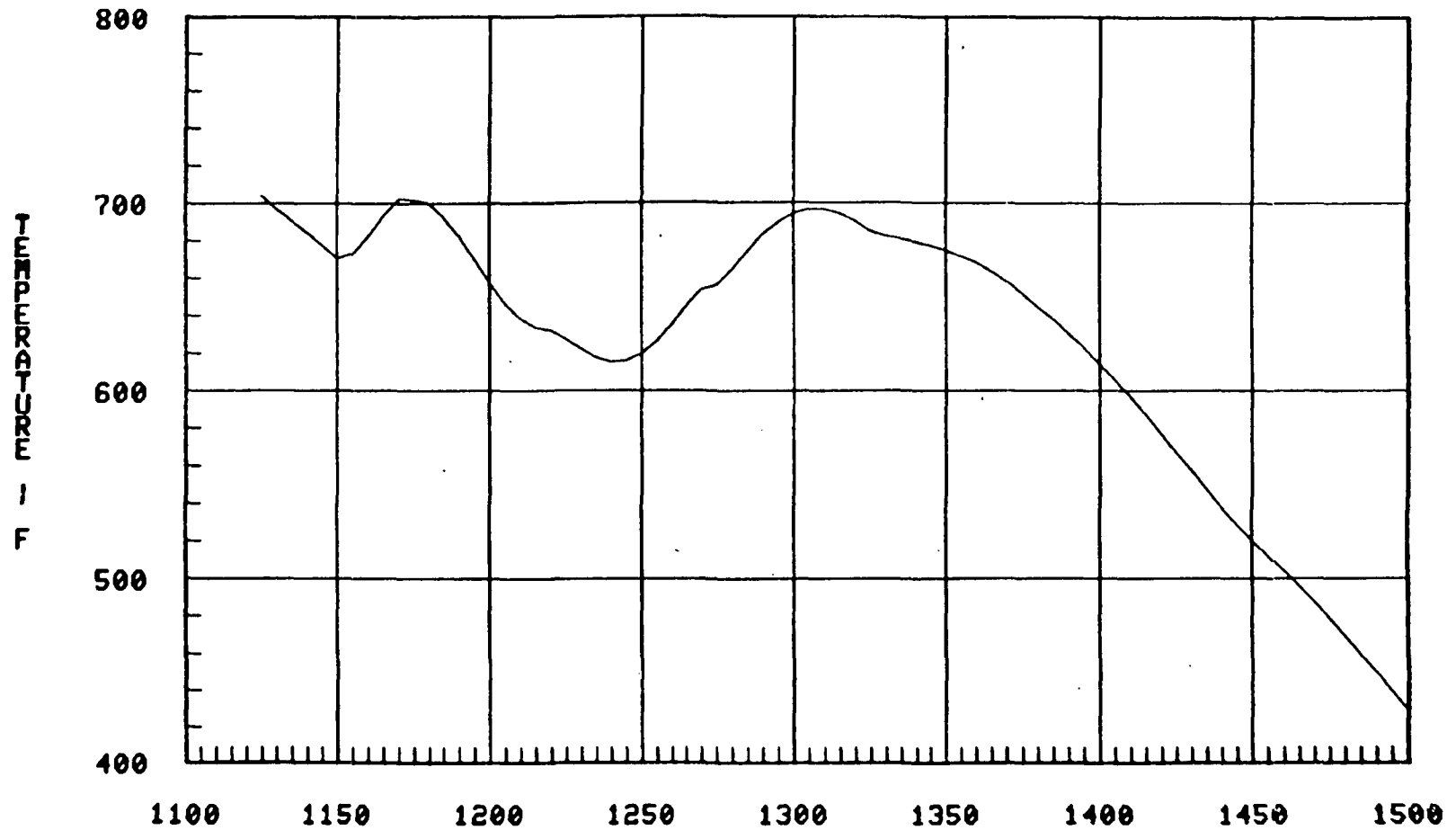
U07T9897A



01/12/84

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

U07T9897A

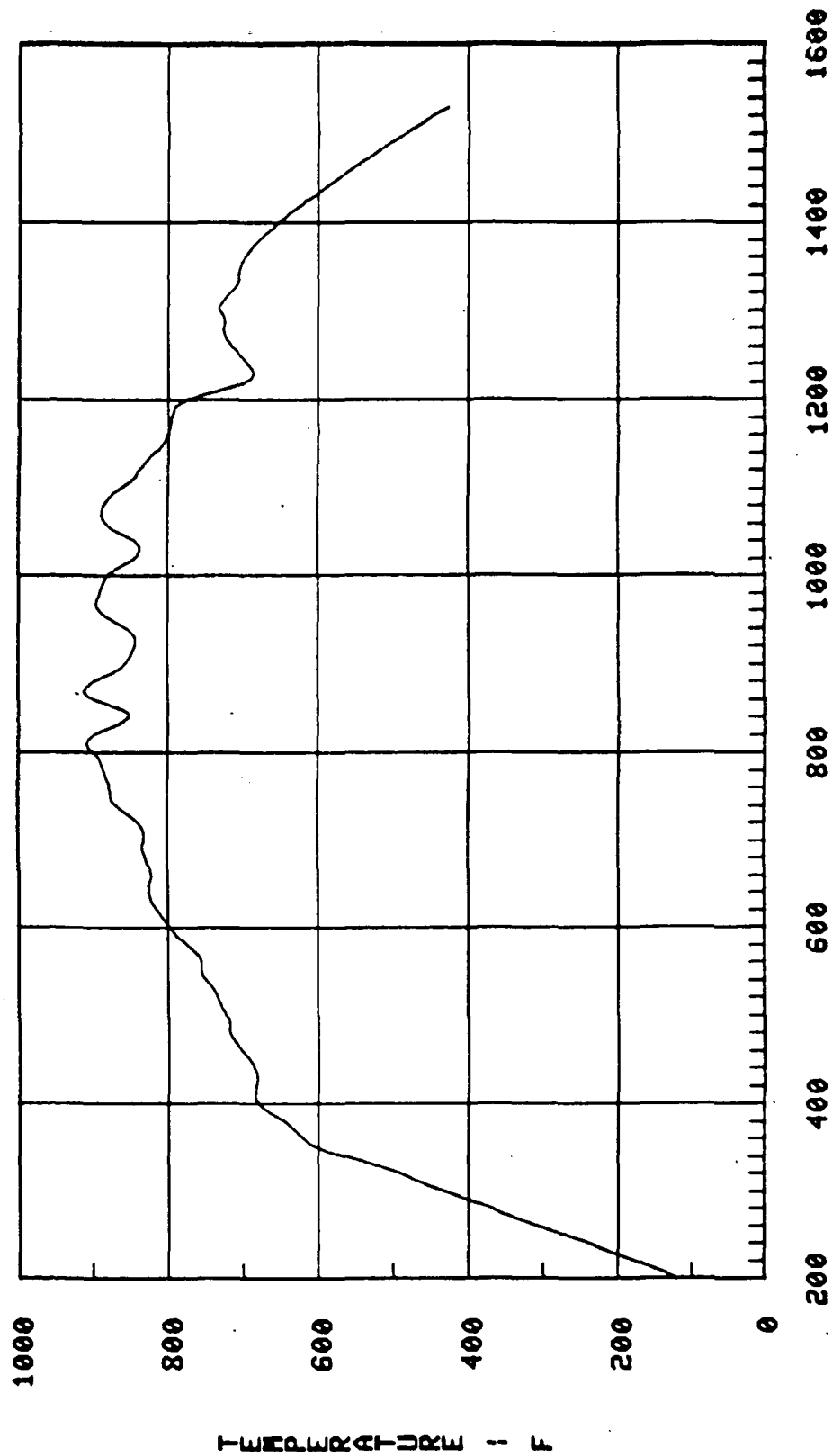


01/11/84

B-121

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

U0779897A

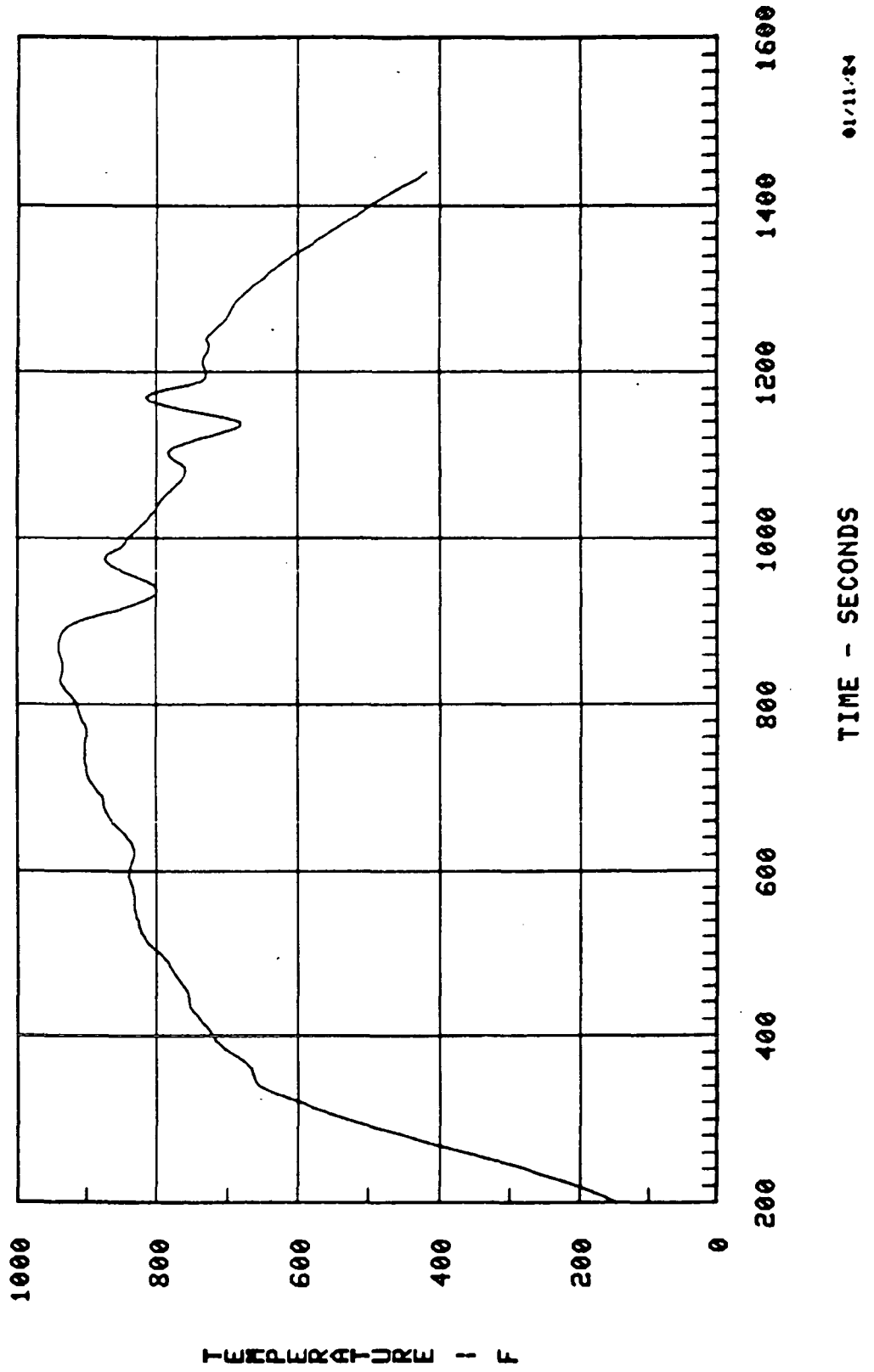


TIME - SECONDS

01/11/84

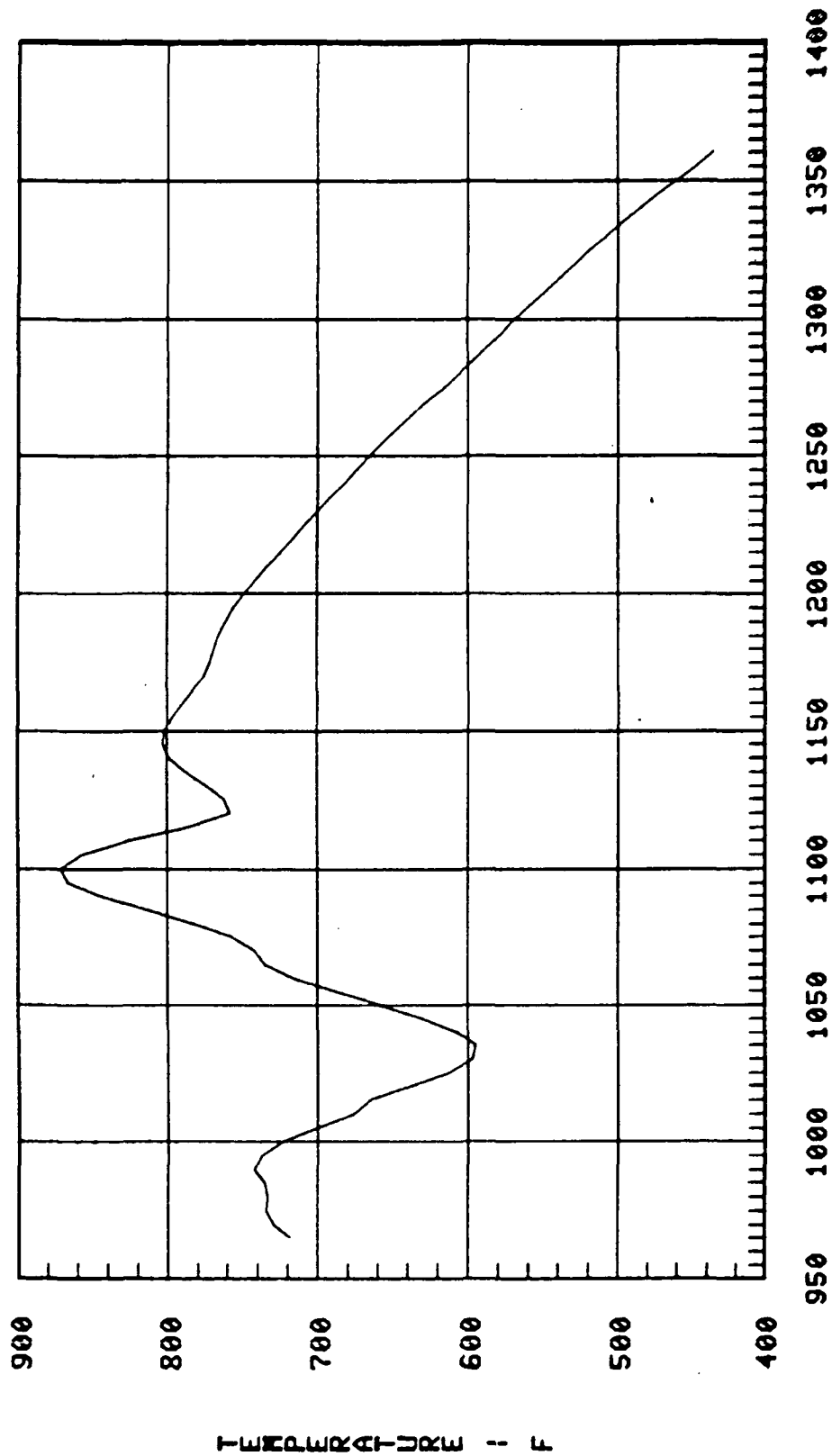
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.40$ )  $Z=400$

U07T9897A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.40$ ) Z=400

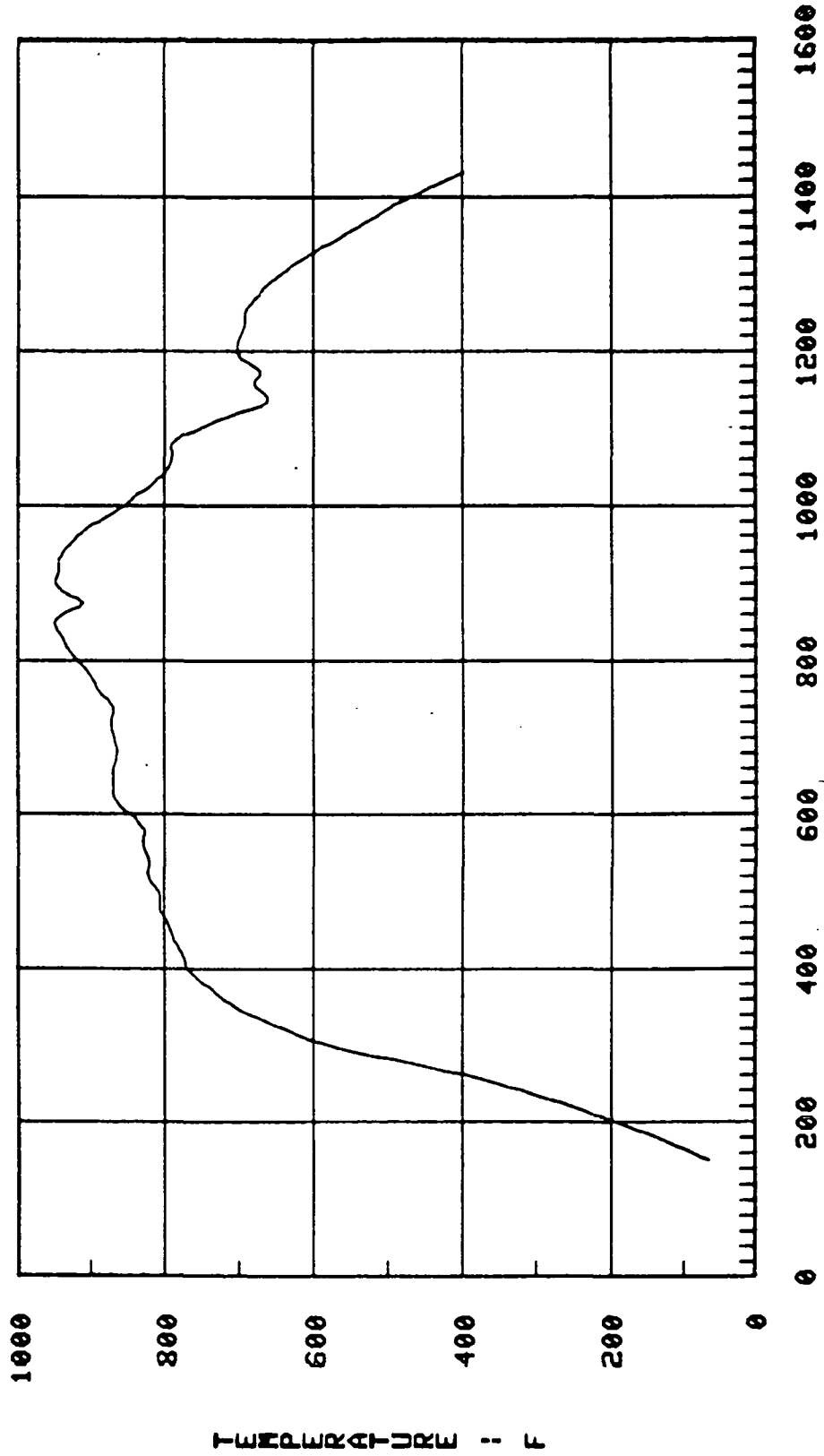
U07T9897A



01/12/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.40$ ) Z=400

U87T9897A



01/12/84

TIME - SECONDS

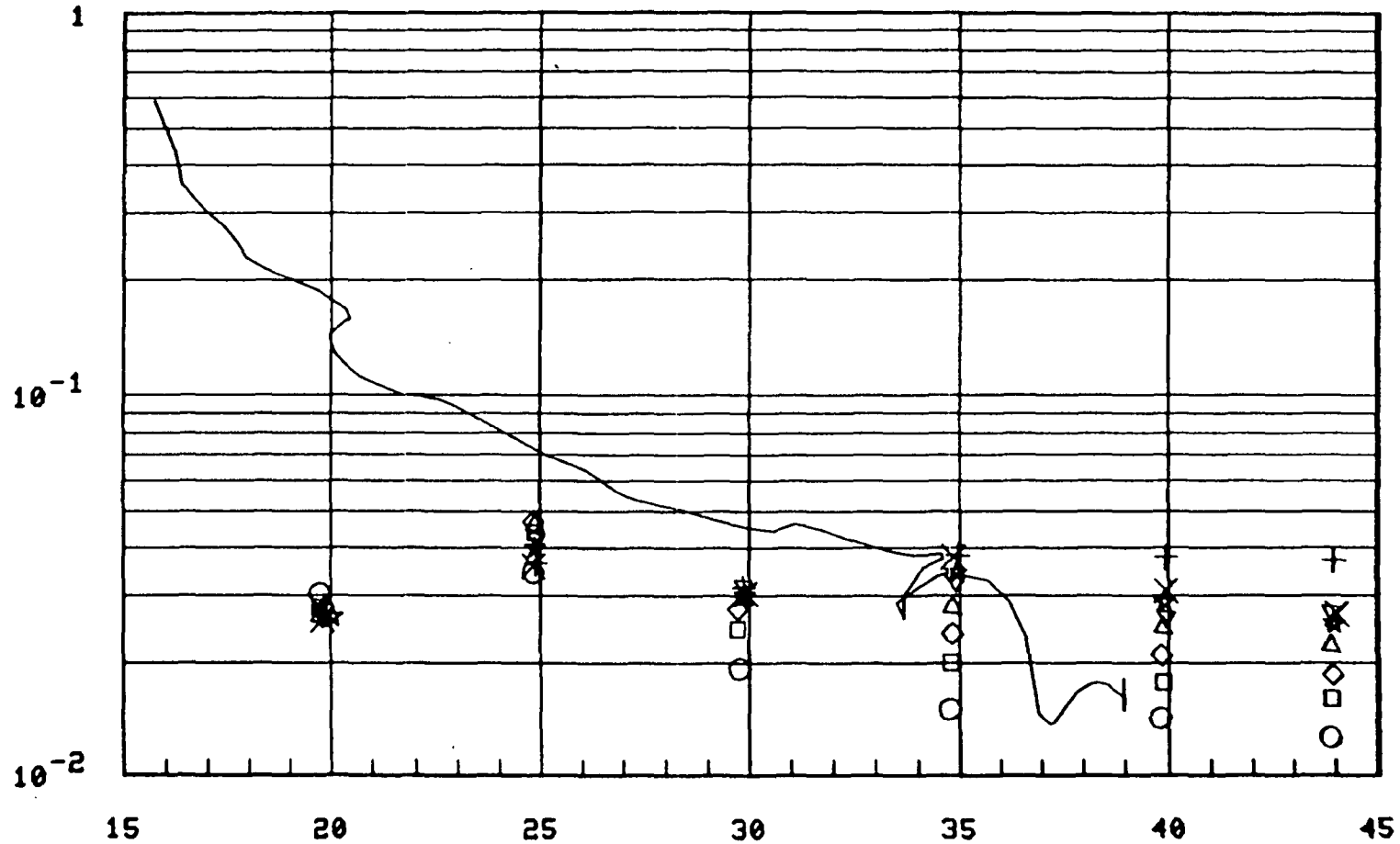
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

O  
□  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9855A/H-REF 1065-1500 SEC

FILE COMUL - H/H-REF



ANGLE-OF-ATTACK - DEG

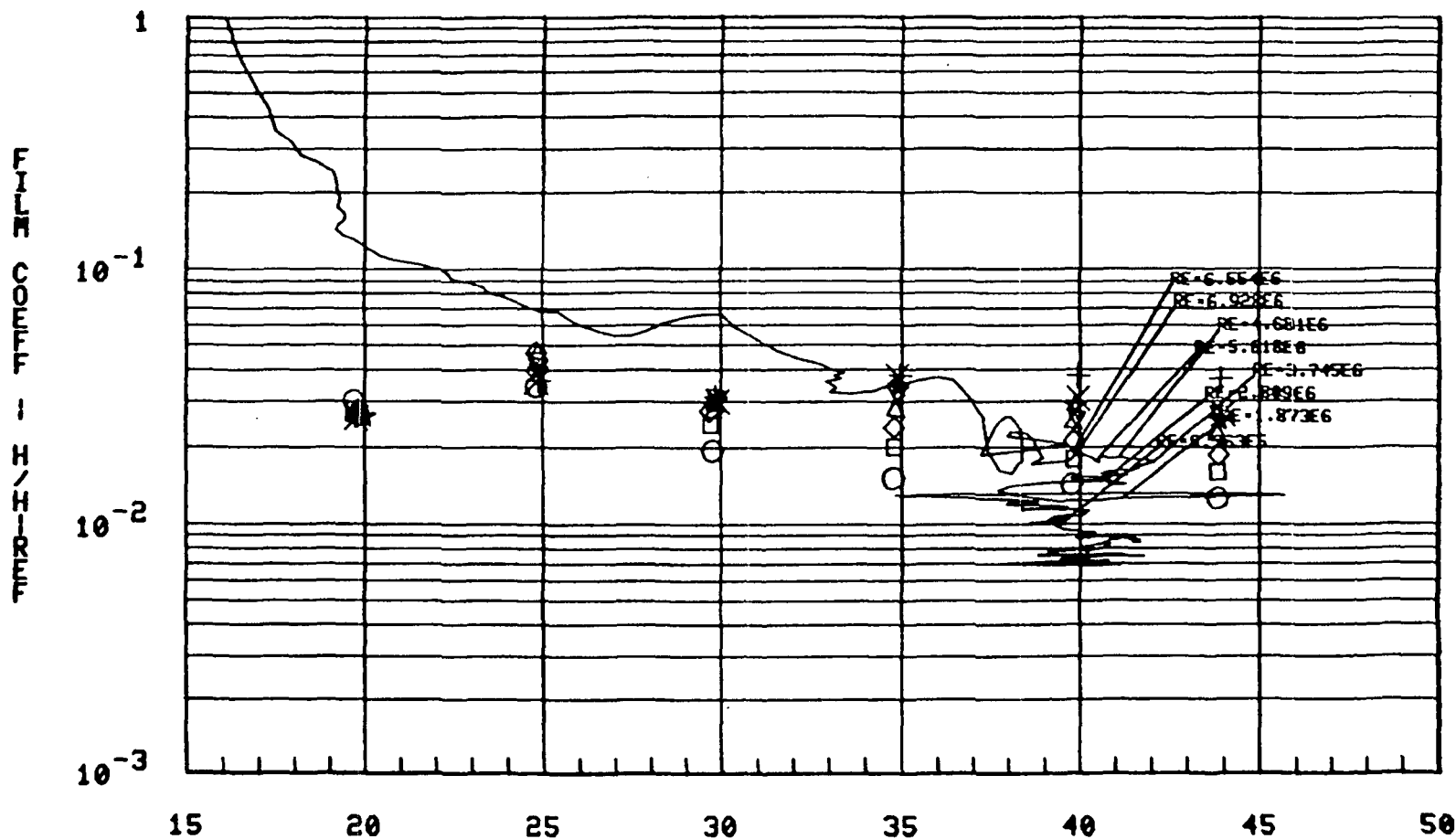
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

○  
□  
△  
▽  
×  
+X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9855A/H-REF 200-1530 SEC



B-127

ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 27550836.000 SEC.

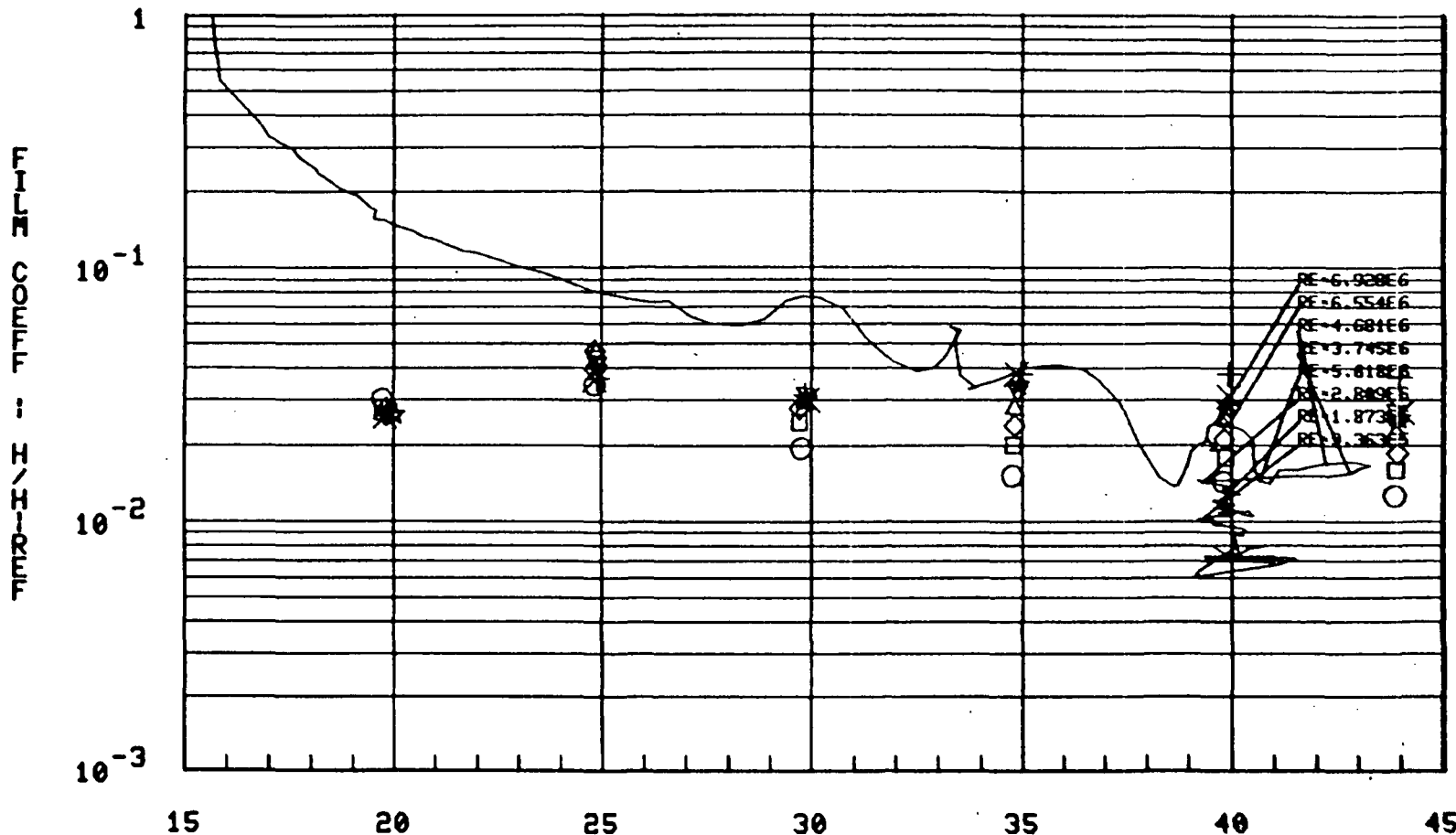


# STS-3 (107 FT LENGTH SIDE FUS X/L=0.425) Z=400

○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9855A/H-REF 200-1440 SEC



B-128

ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

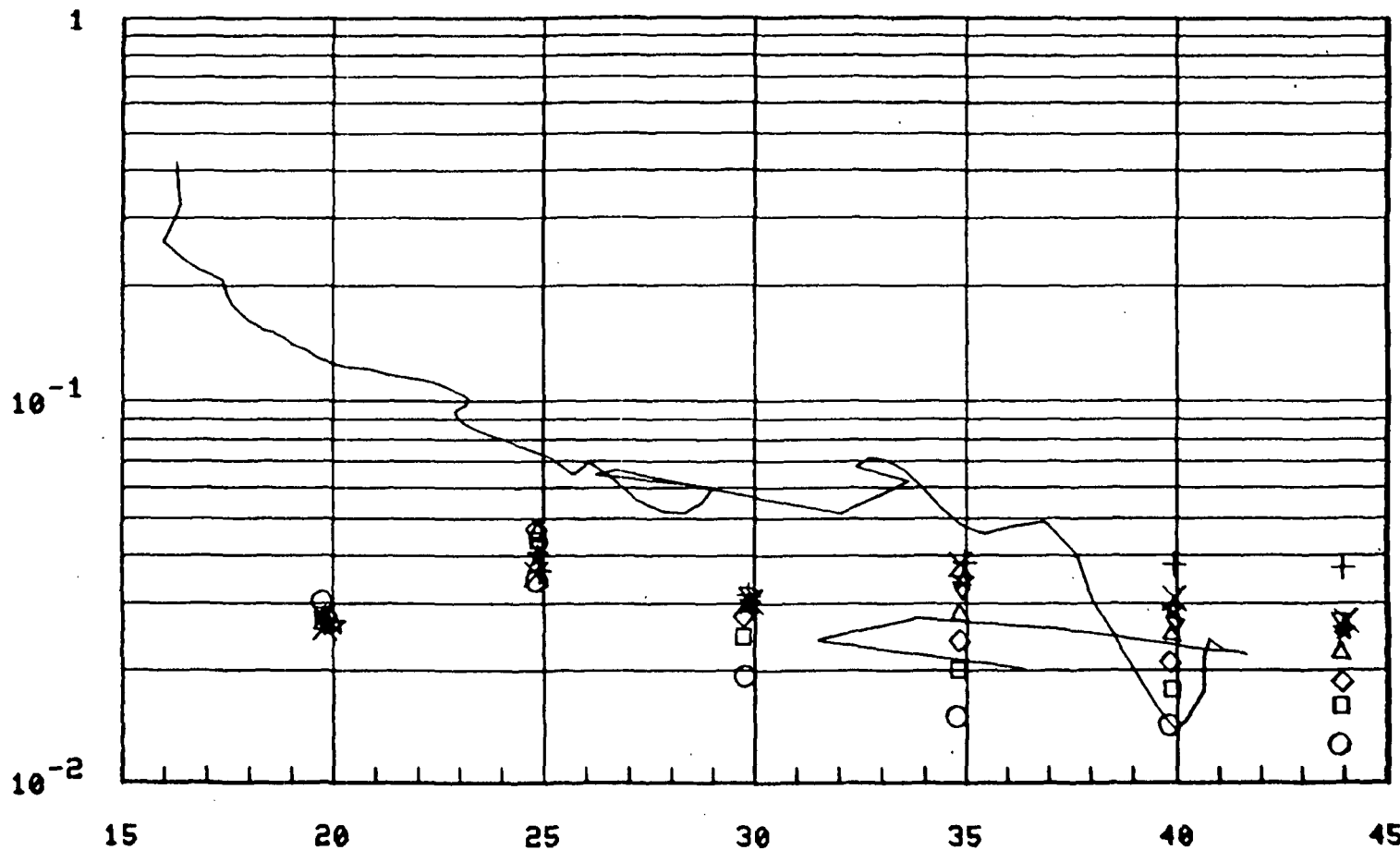
O  
□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9855A/H-REF 965-1360 SEC

LINE COUNT - I/I-SKILL

B-129



ANGLE-OF-ATTACK - DEG

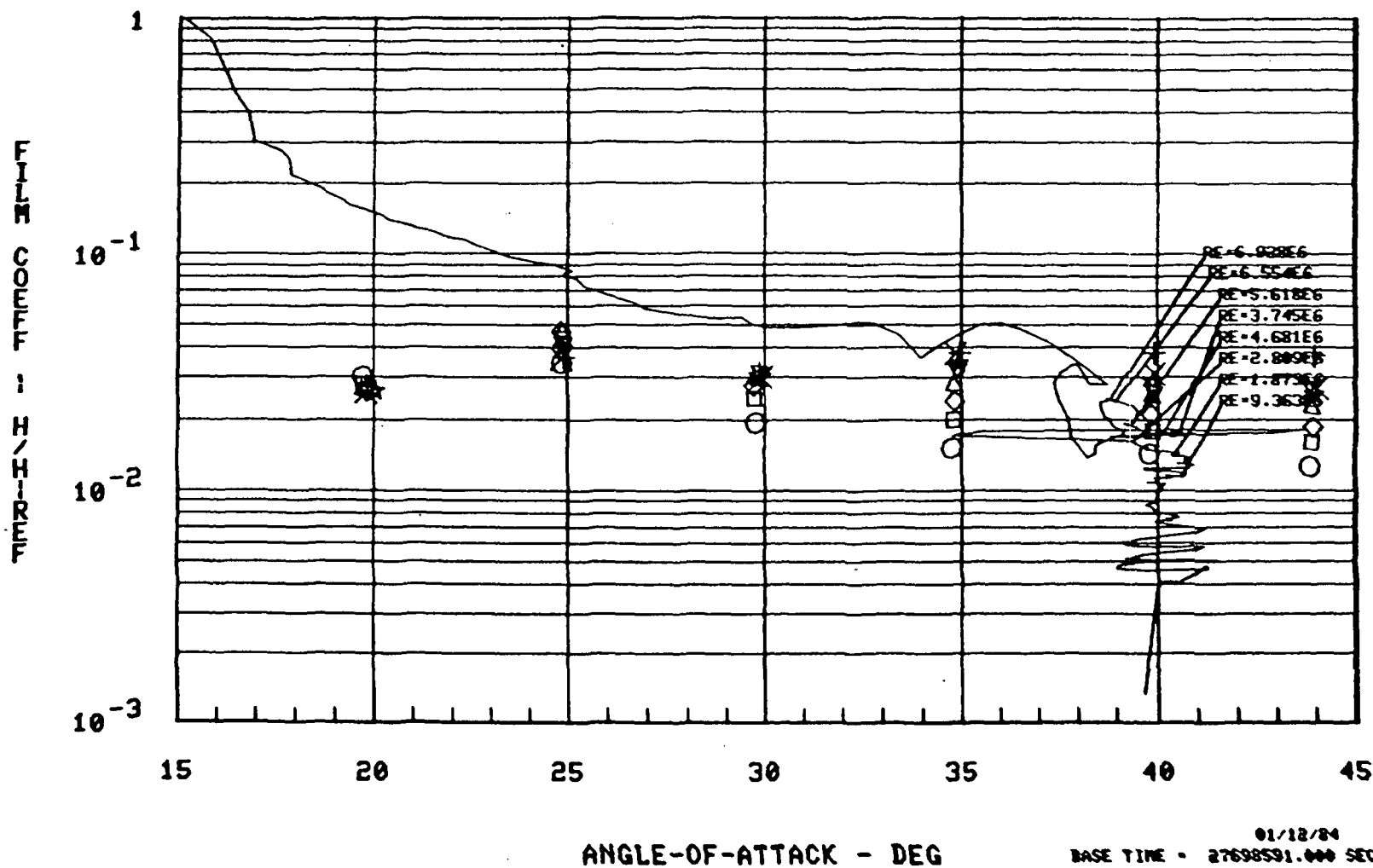
01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS X/L=0.425) Z=400

O  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

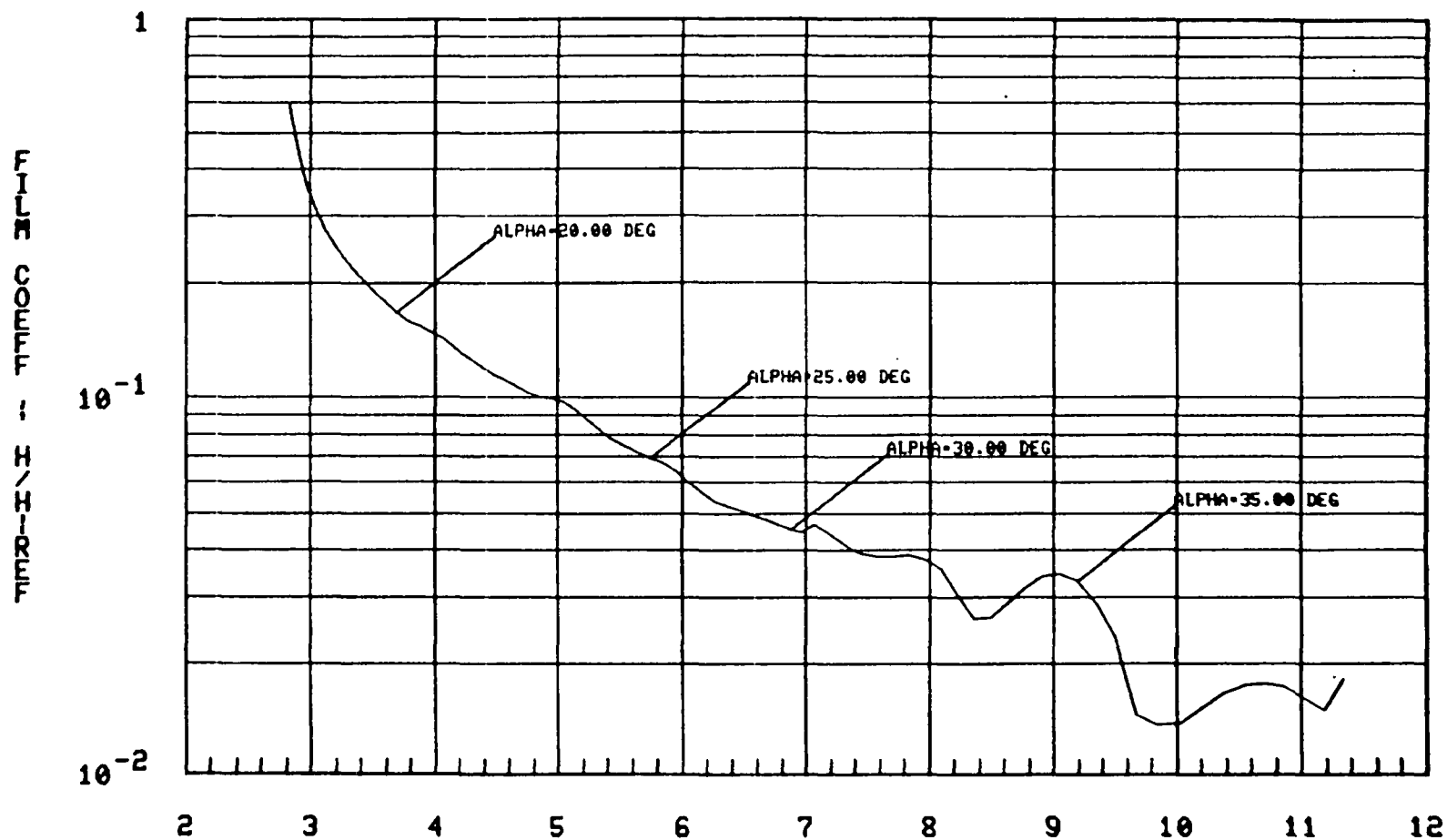
U07T9855A/H-REF 150-1430 SEC



B-130

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

U07T9855A/H-REF 1065-1500 SEC



MACH NUMBER

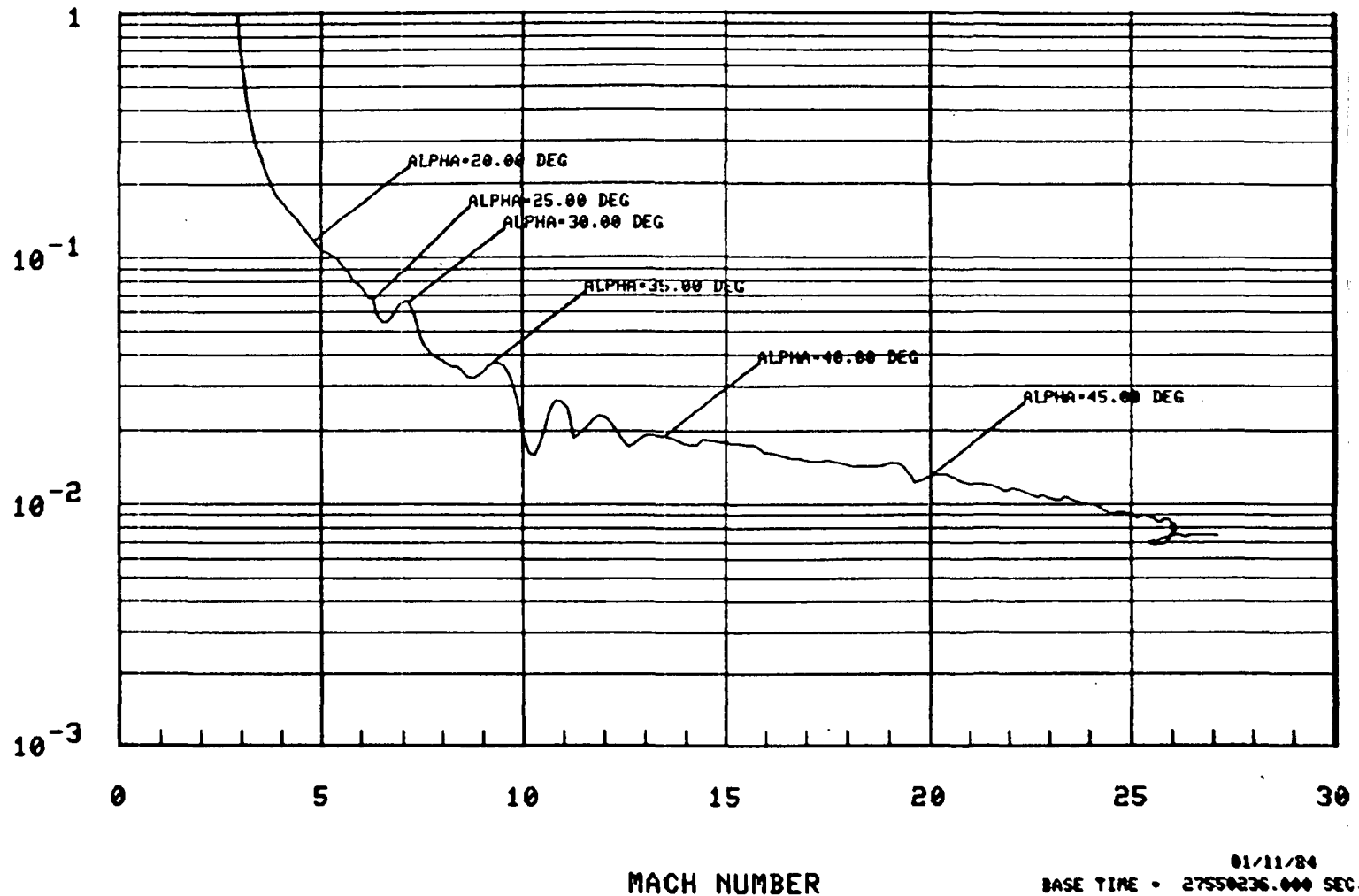
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS X/L=0.425) Z=400

U07T9855A/H-REF 200-1530 SEC

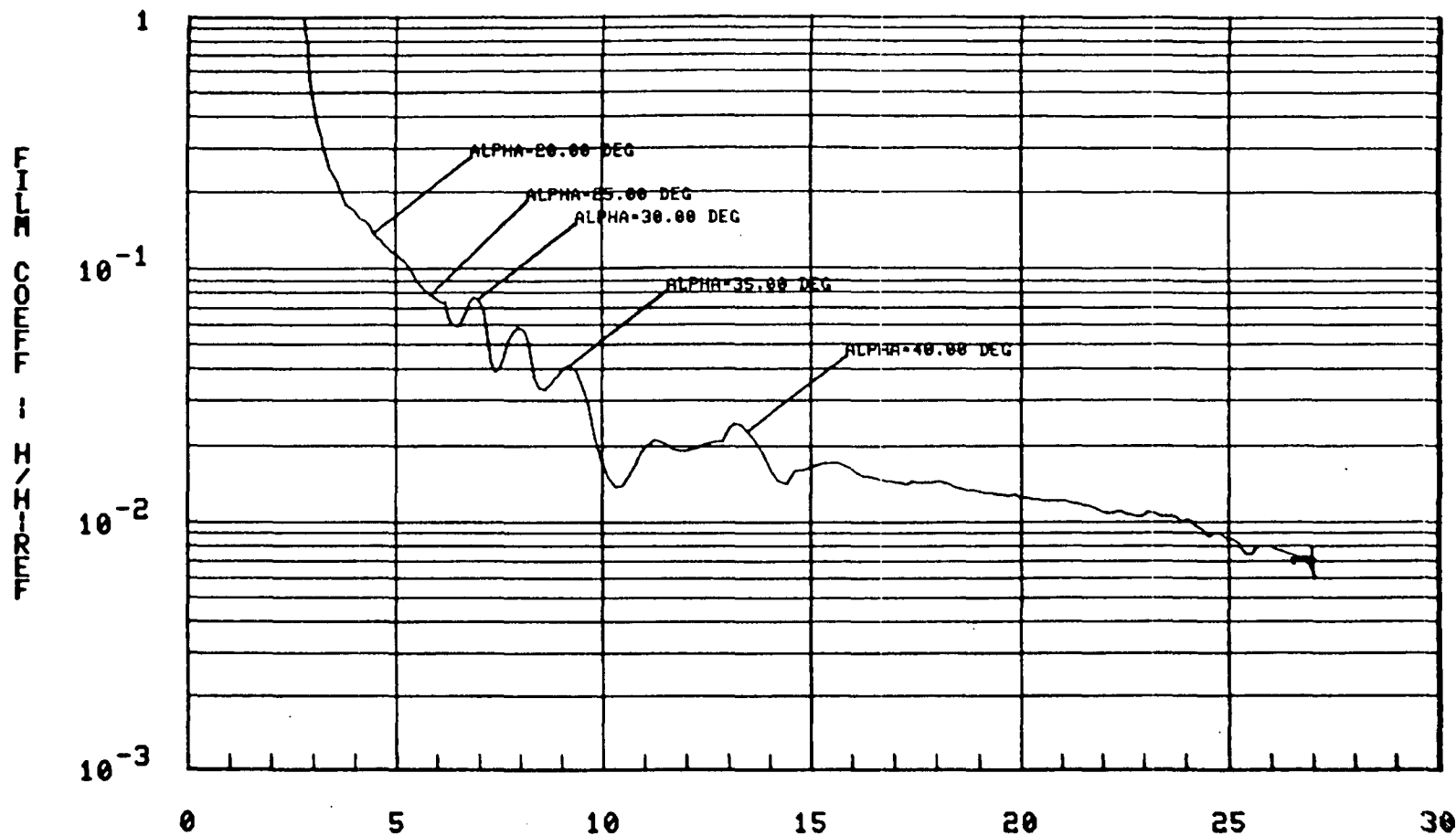
B-132

LINE COUNT - H/H-GRU



STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A/H-REF 200-1440 SEC



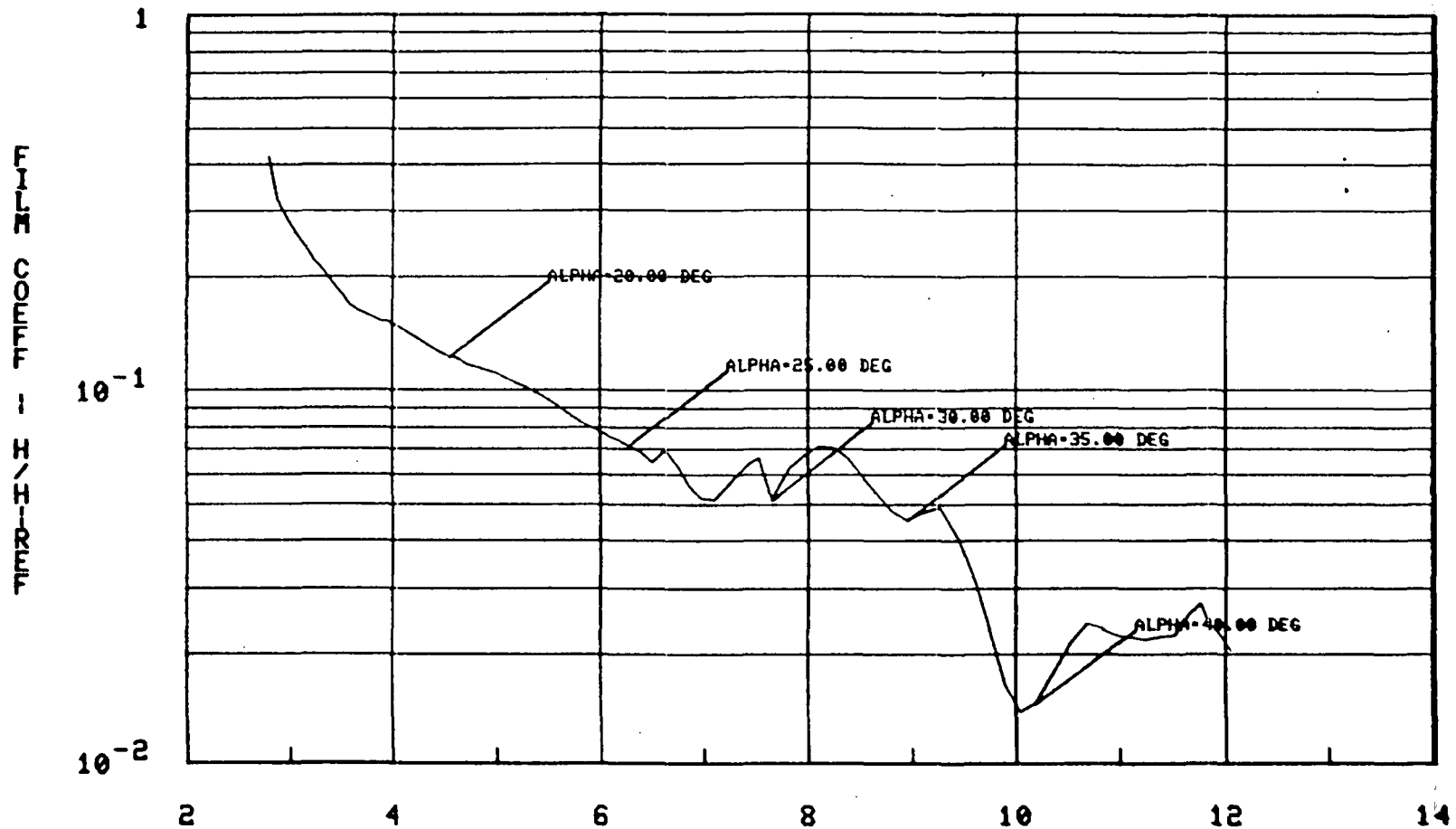
B-133

MACH NUMBER

01/11/84  
BASE TIME - 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

U07T9855A/H-REF 965-1360 SEC

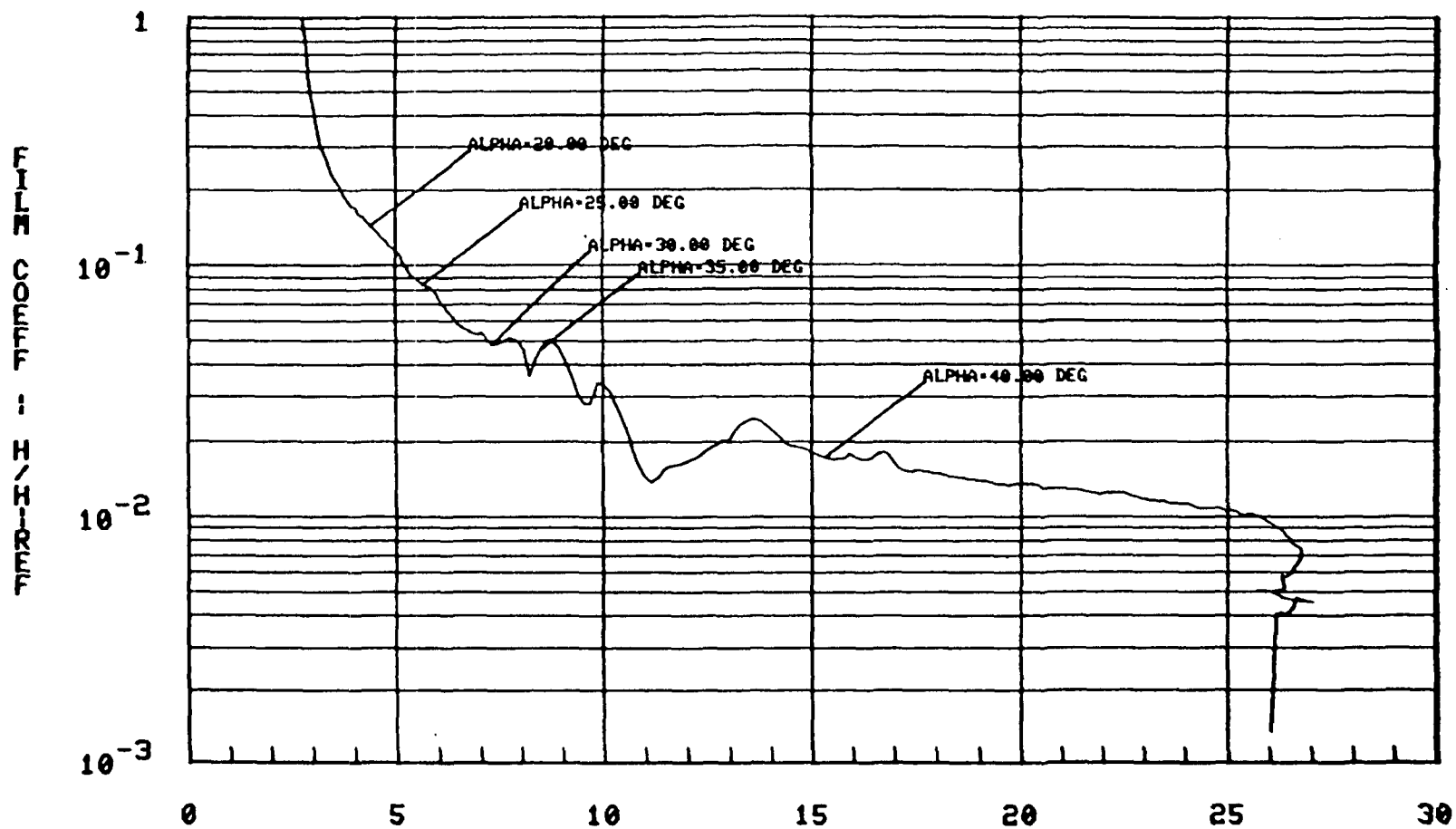


B-134

01/12/84  
BASE TIME - 16040423.000 SEC.

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A/H-REF 150-1430 SEC



B-135

MACH NUMBER

01/12/84  
BASE TIME - 27698591.000 SEC.



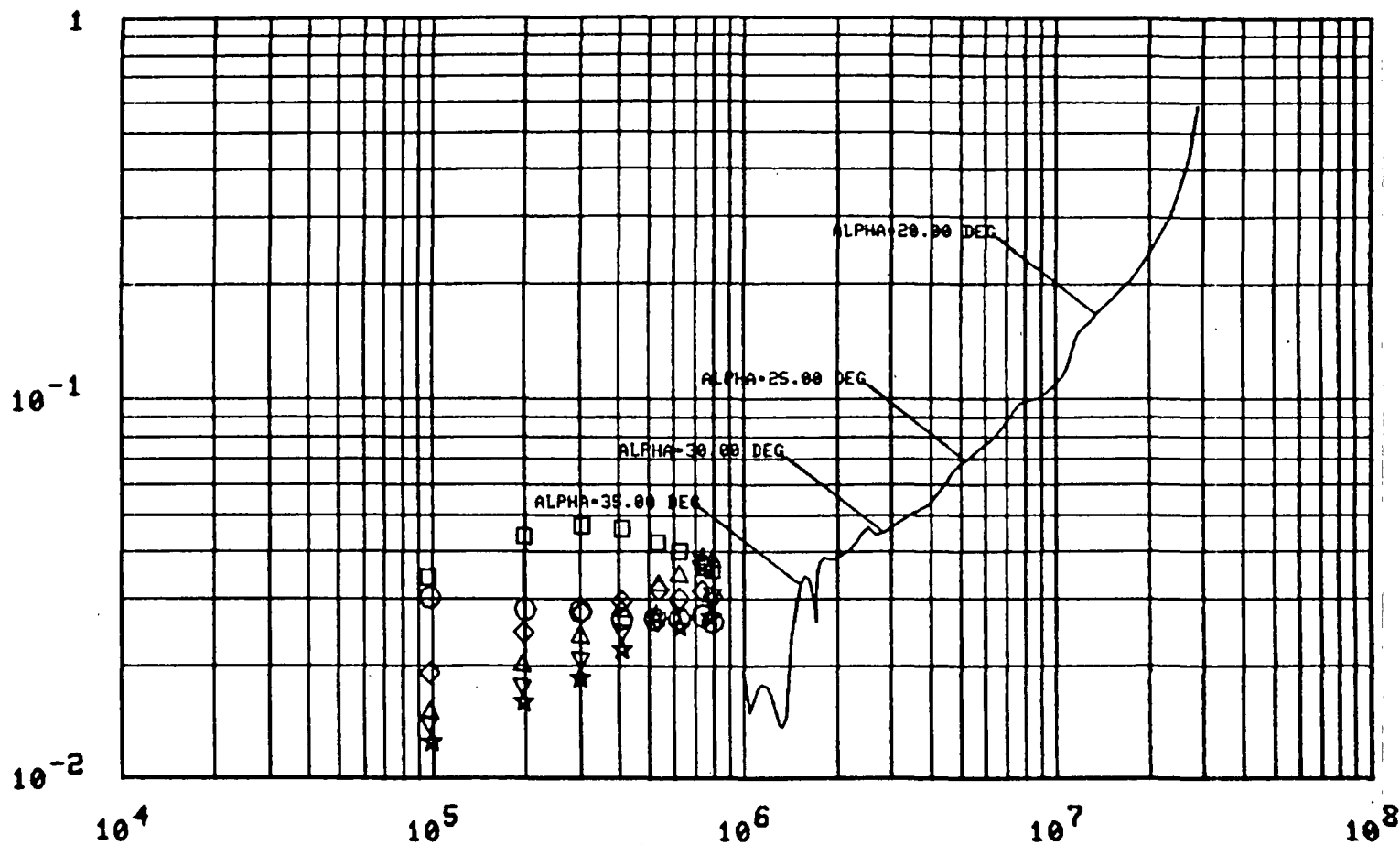
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9855A/H-REF 1065-1500 SEC

WAKE COEFF -  $H/H_{REF}$



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 09049744.000 SEC.

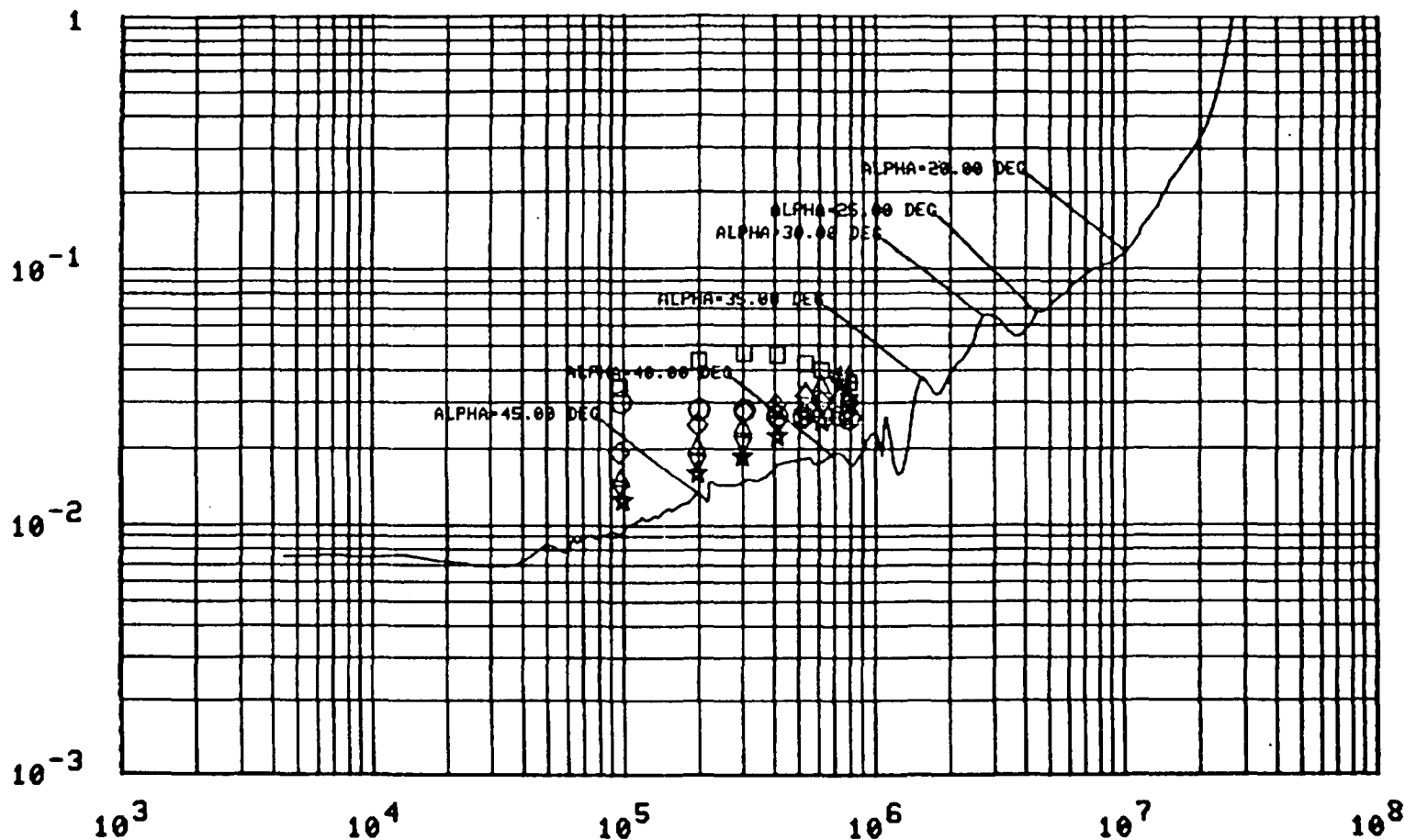
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9855A/H-REF 200-1530 SEC

LINE COUNT - I/I-COUNT



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 27550236.000 SEC.

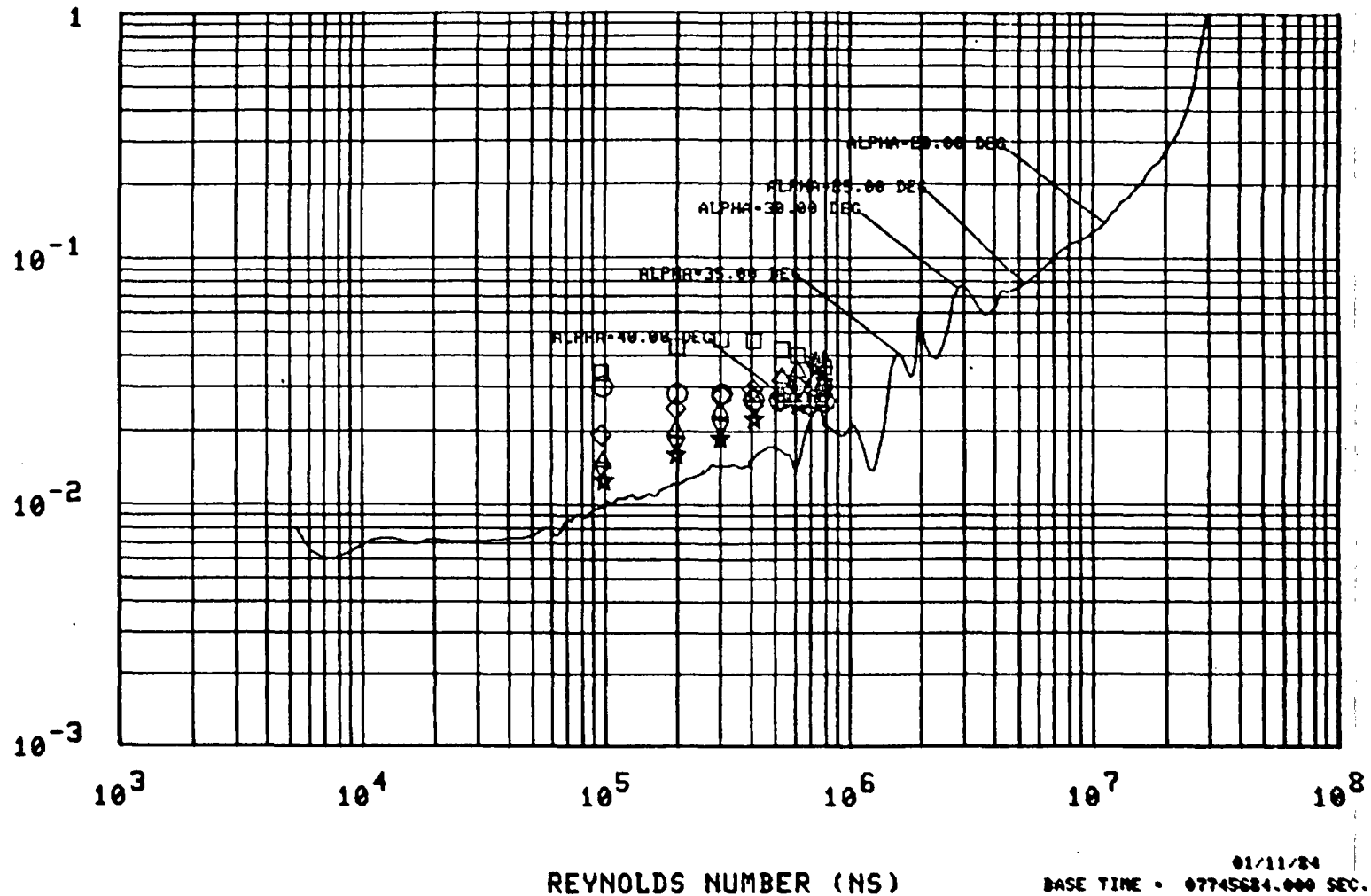
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9855A/H-REF 200-1440 SEC

WAVE COEFF. -  $H/I$  - SWELL



# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

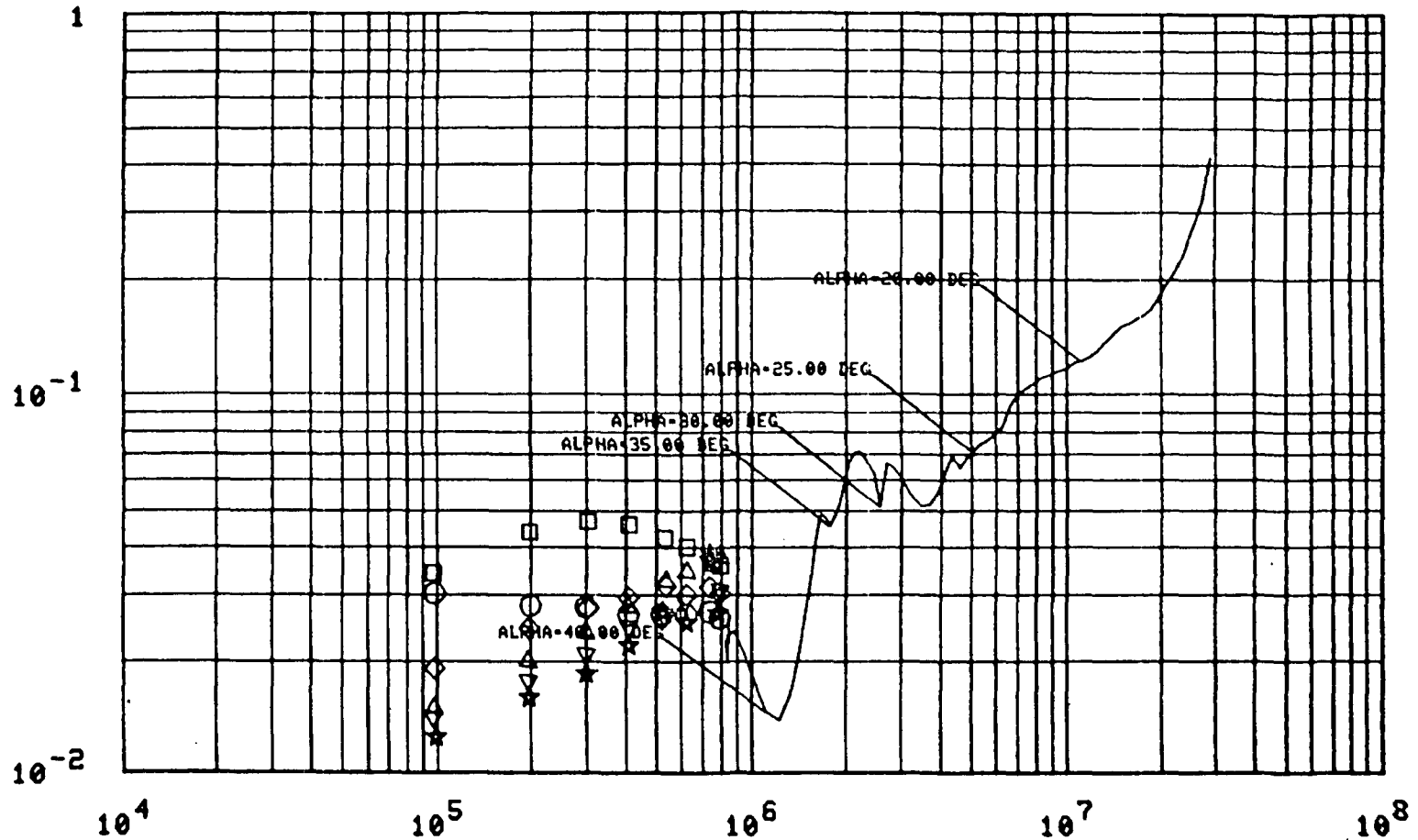
○  
□  
◇  
△  
▽  
★

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9855A/H-REF 965-1360 SEC

LINE CODE - I/I-000

B-139



REYNOLDS NUMBER (NS)

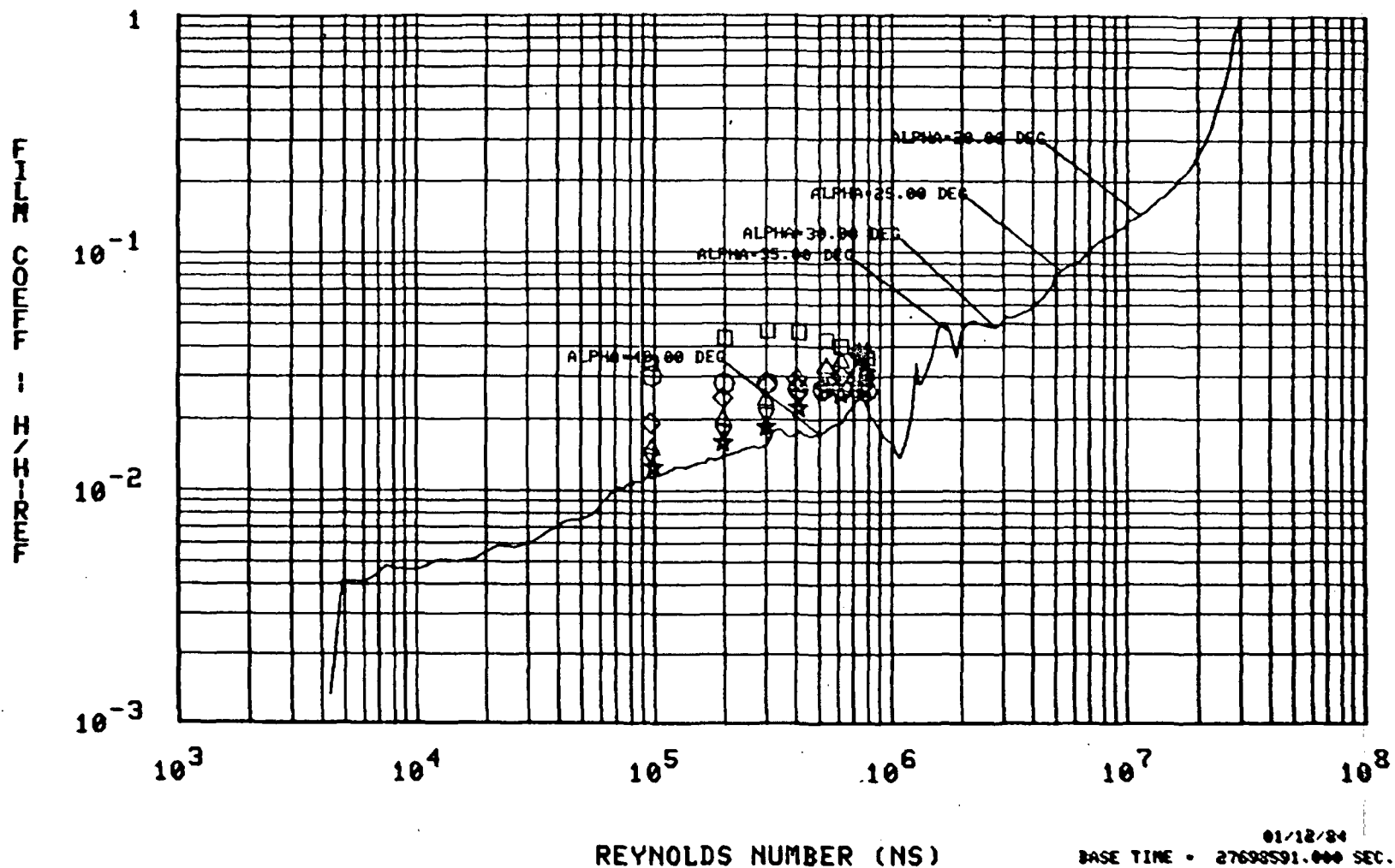
01/12/84  
BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.425$ ) $Z=400$

○  
◇  
△  
▽  
★

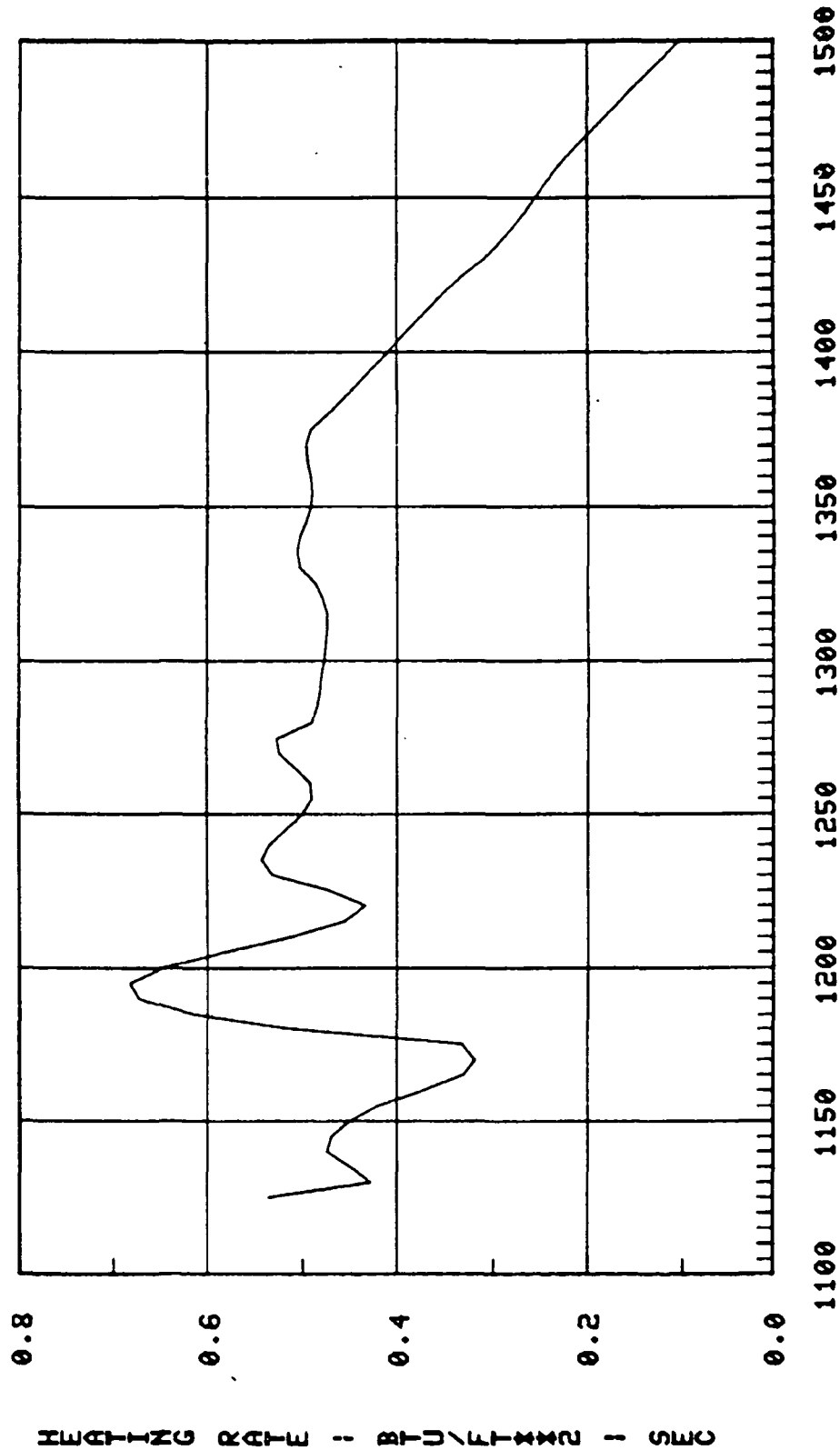
OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9855A/H-REF 150-1430 SEC



STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A

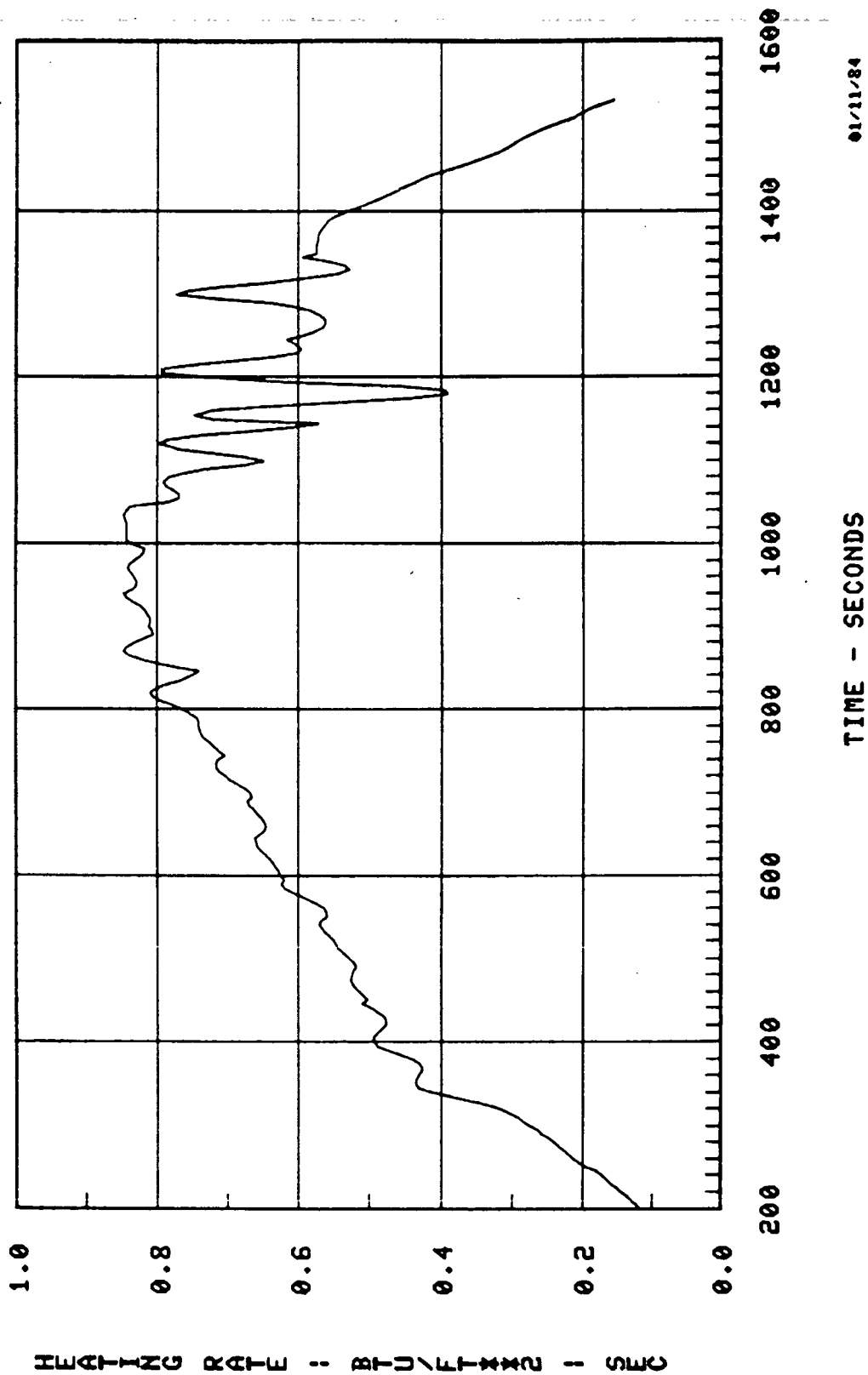


TIME - SECONDS

01/11/84

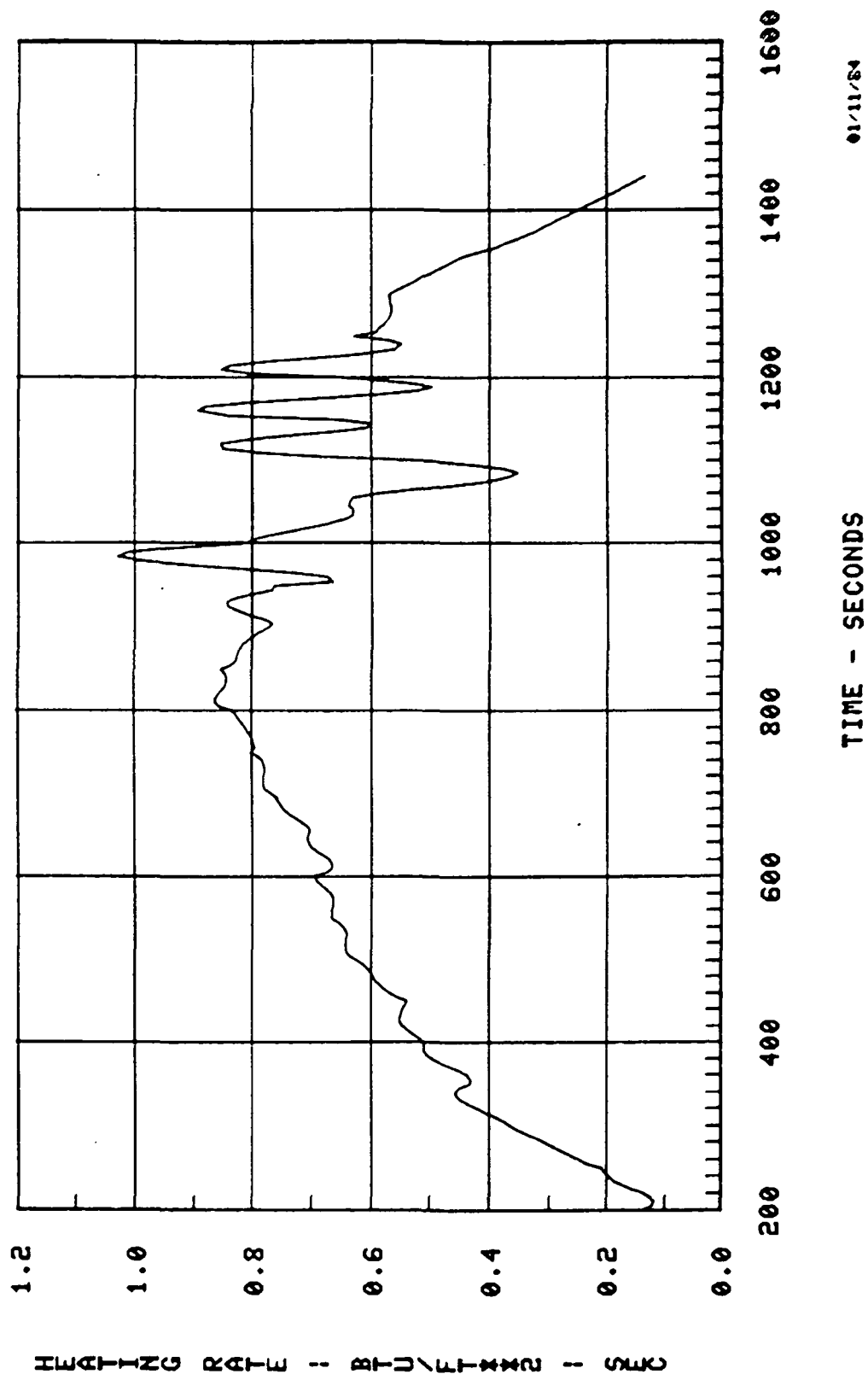
STS-2 (107 FT LENGTH SIDE FUS X/L=0.425) Z=400

U07T9855A



STS-3 (107 FT LENGTH SIDE FUS X/L=0.425) Z=400

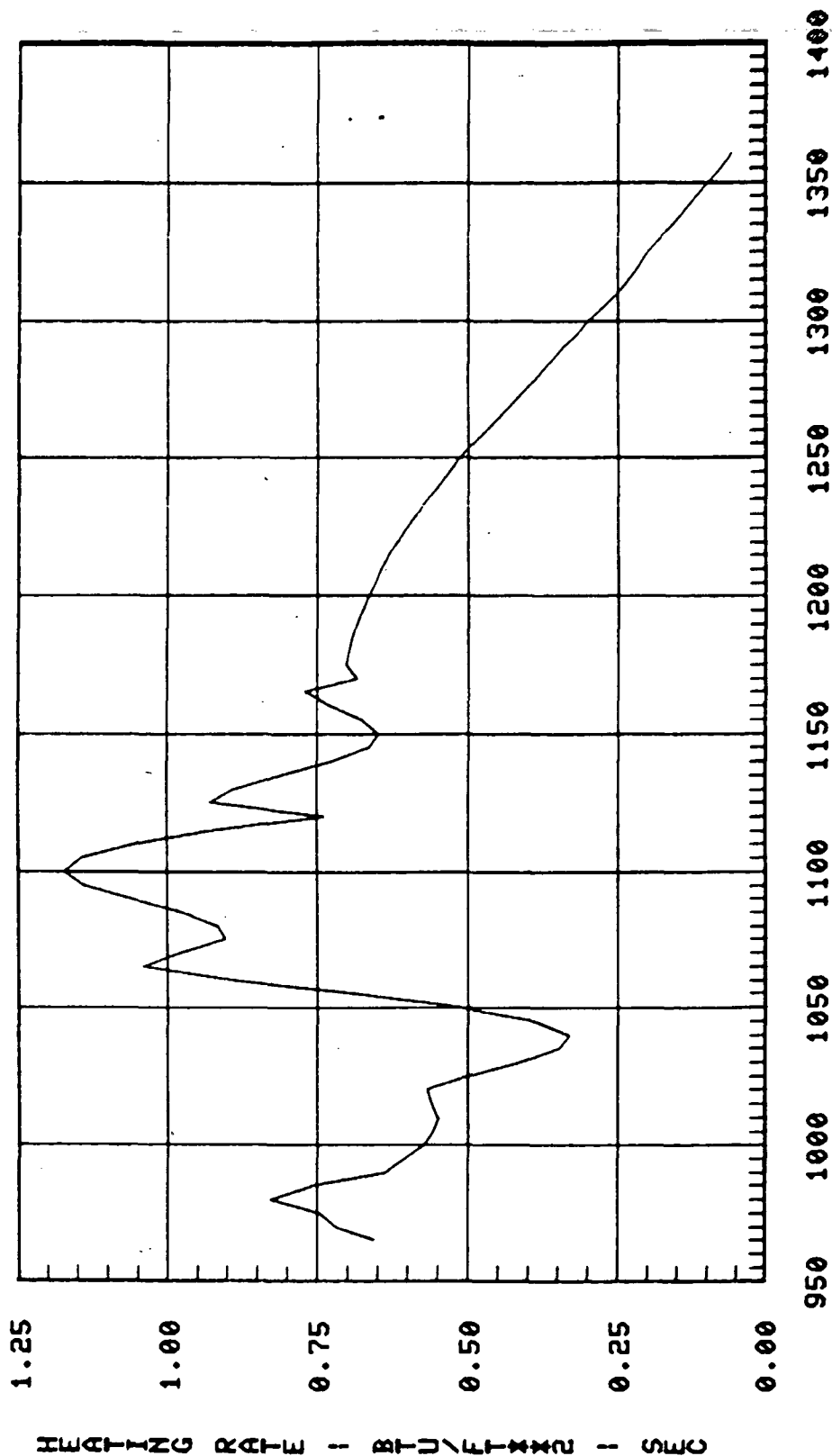
U07T9855A





STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U0779855A

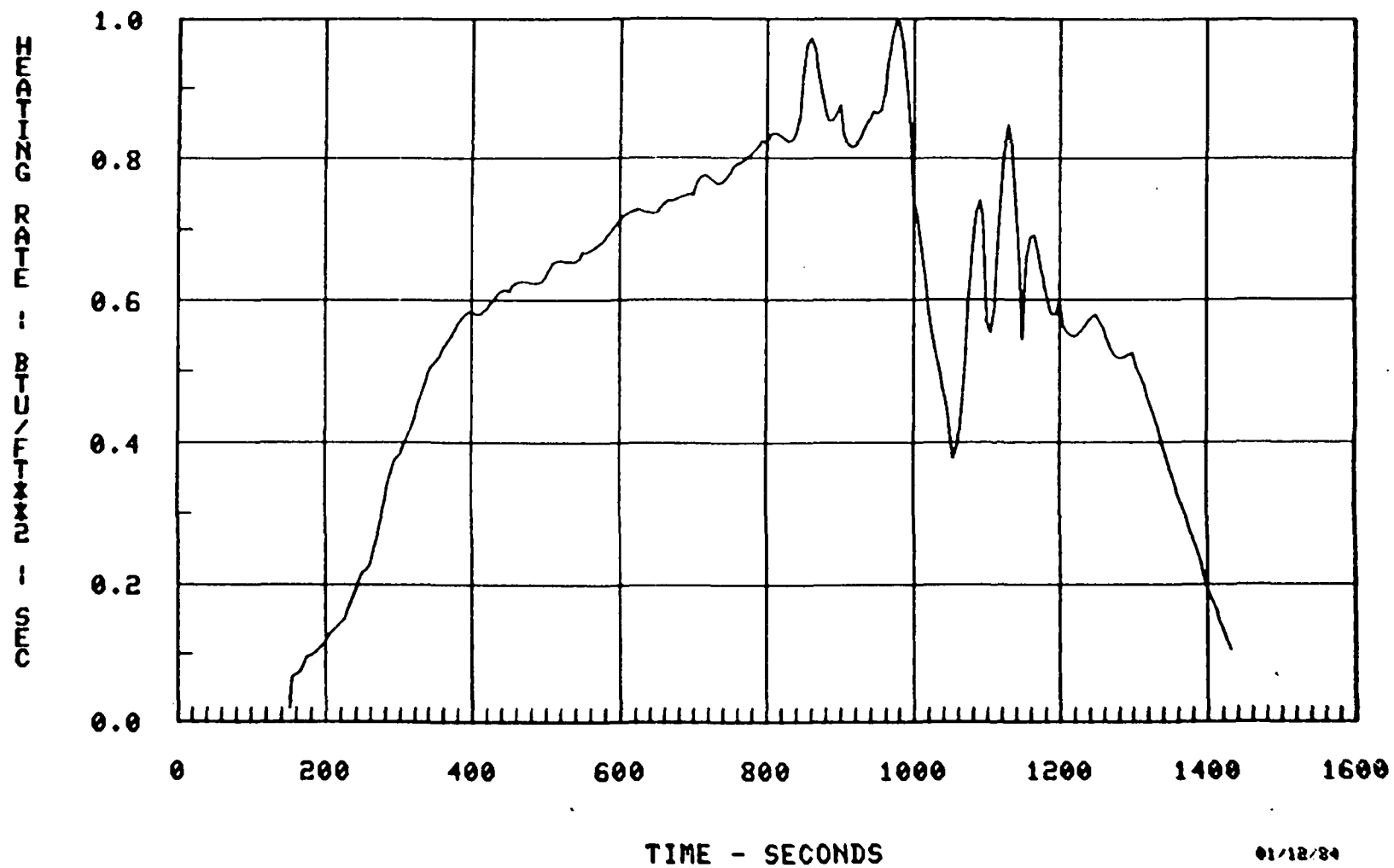


TIME - SECONDS

01/12/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A

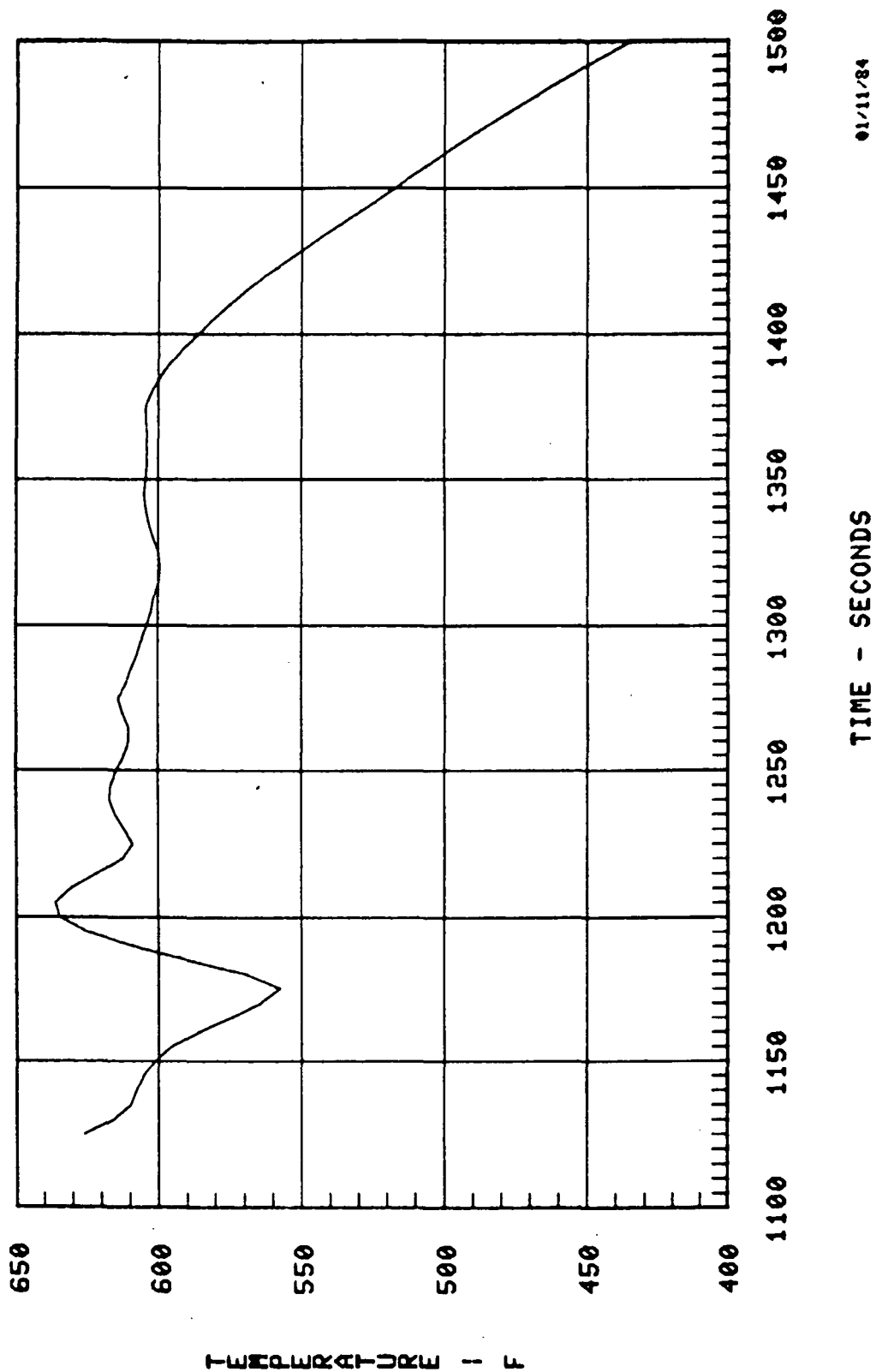


B-145

01/18/84

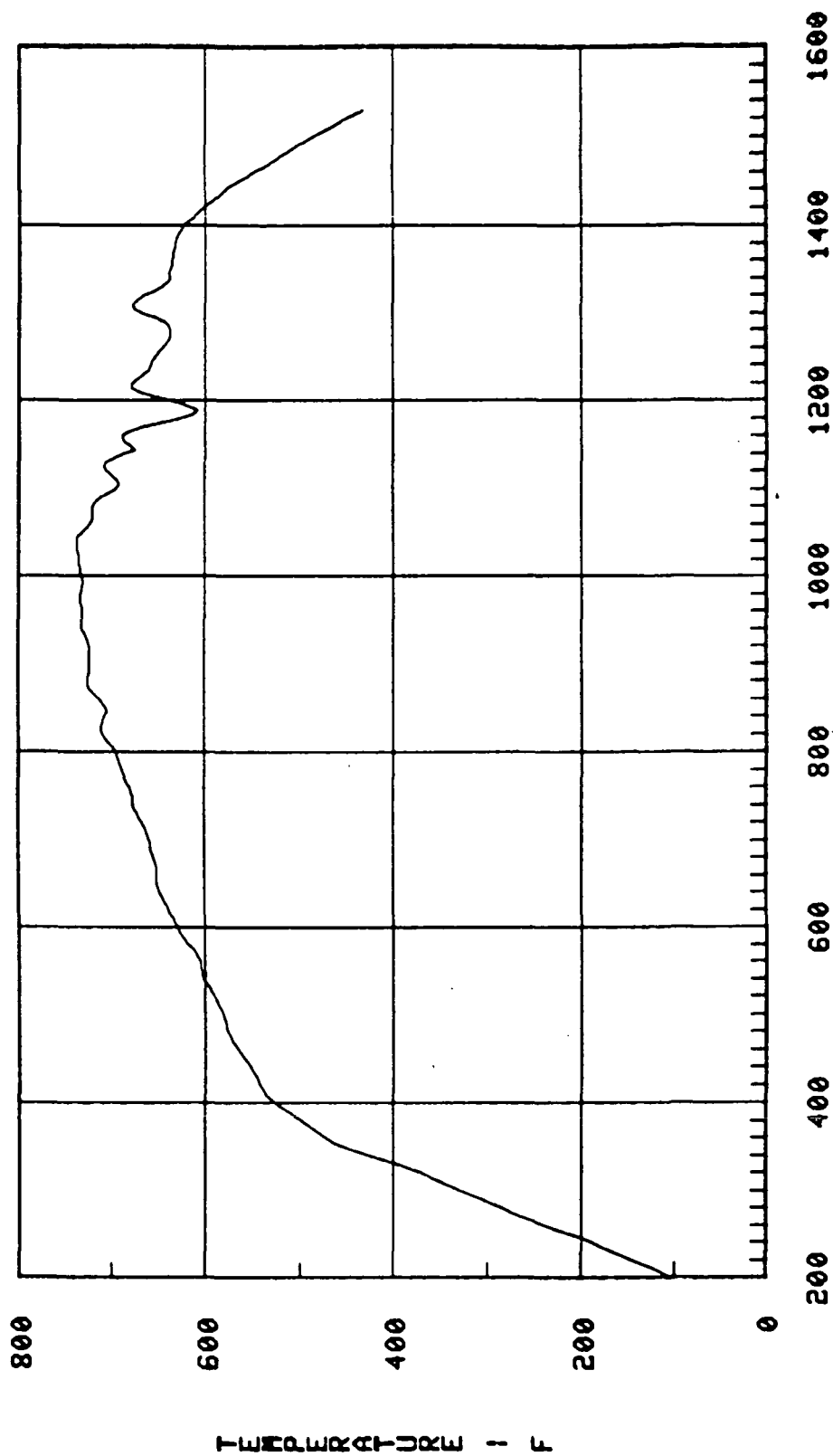
STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A



STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.425$ ) Z=400

U07T9855A

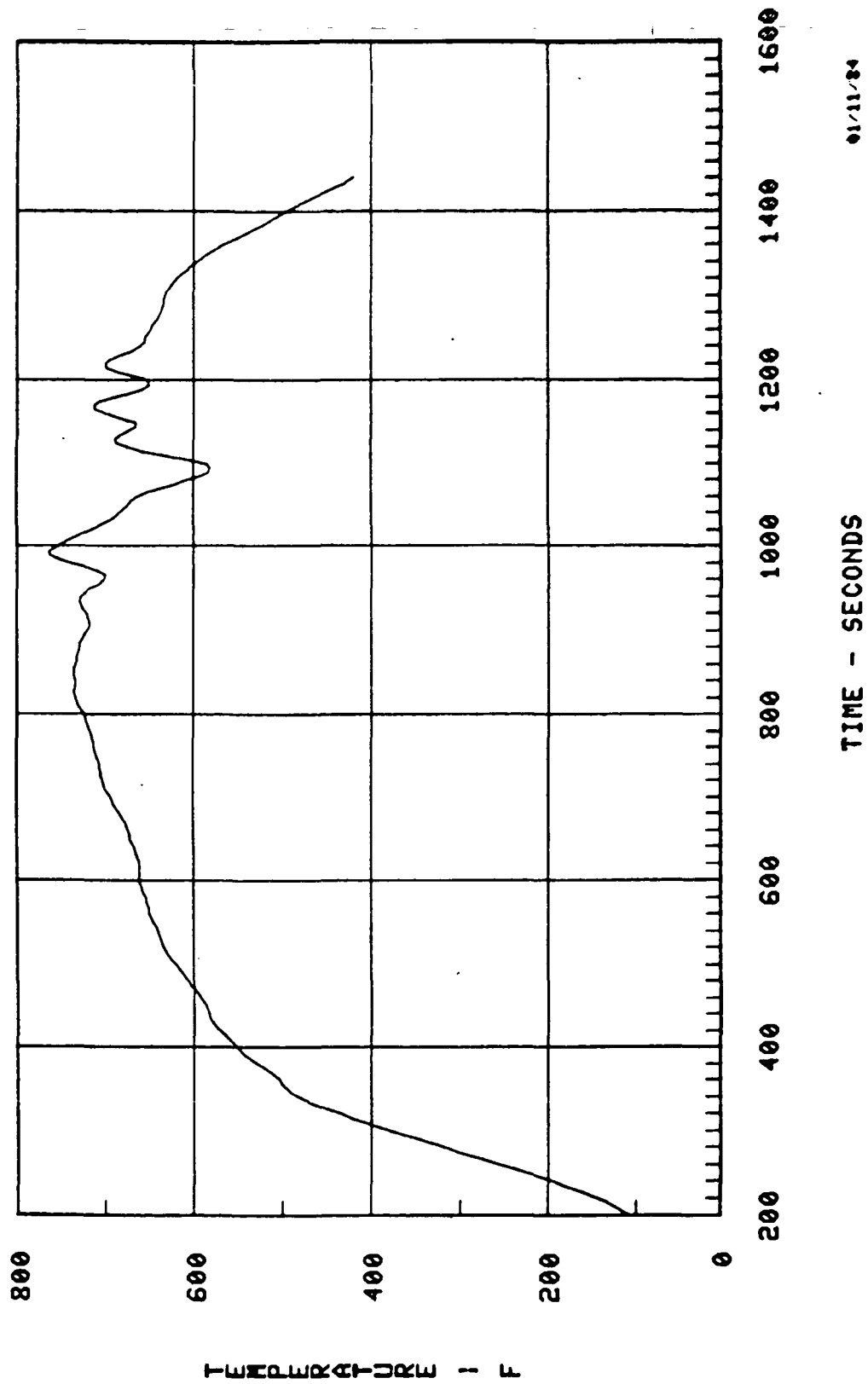


TIME - SECONDS

01/11/84

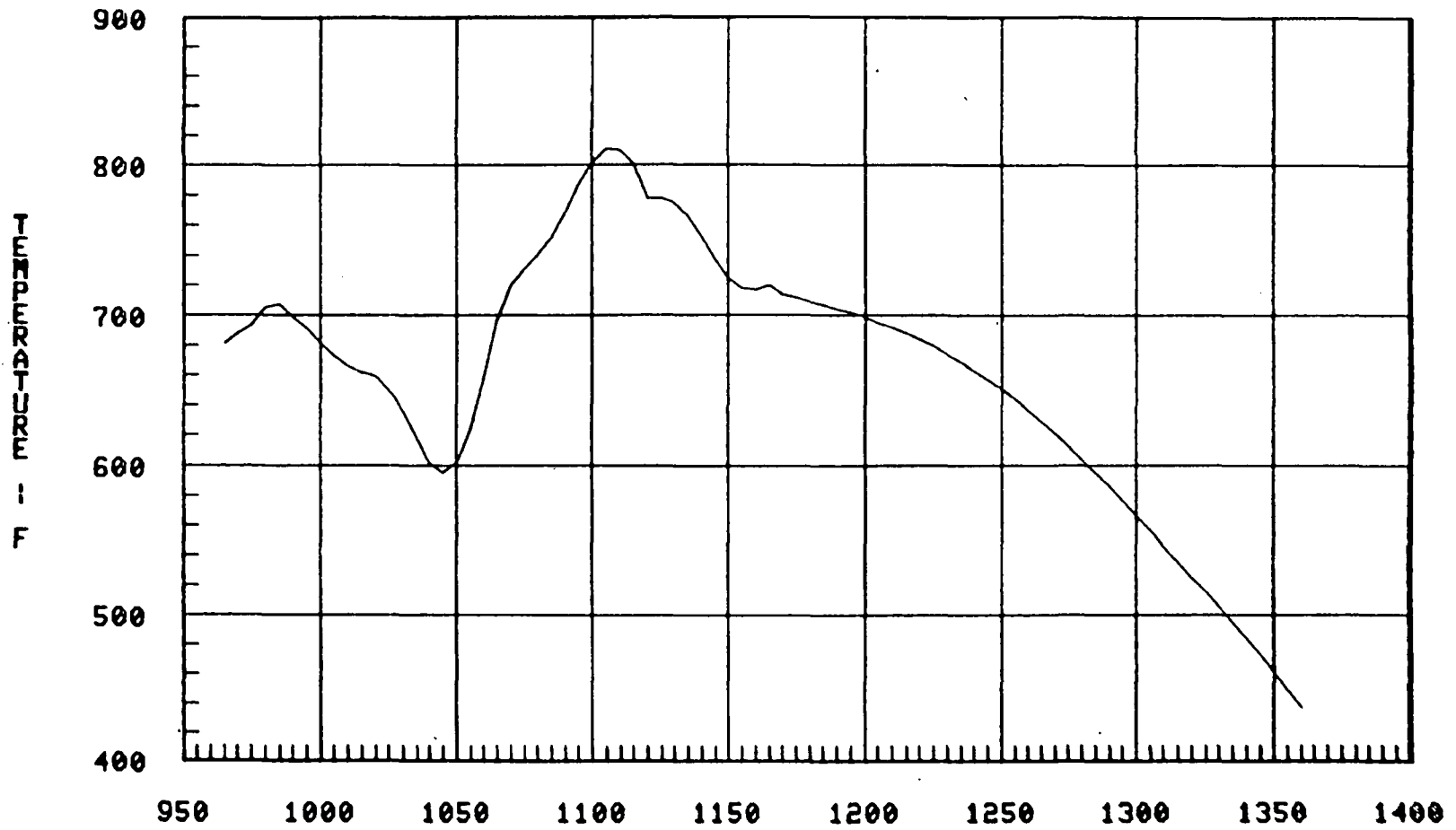
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A

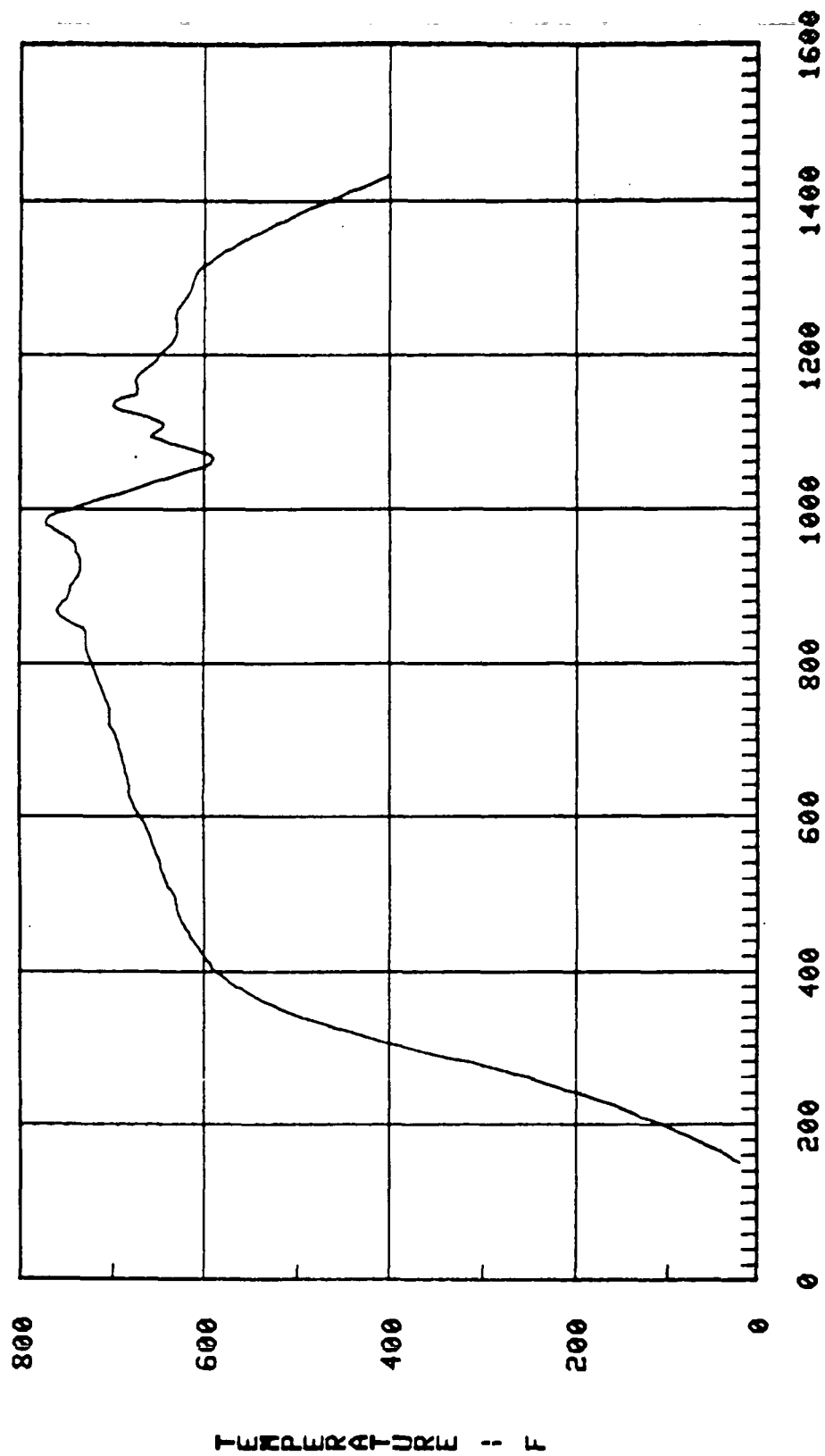


01/12/84

B-149

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.425$ )  $Z=400$

U07T9855A



TIME - SECONDS

01/12/84

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

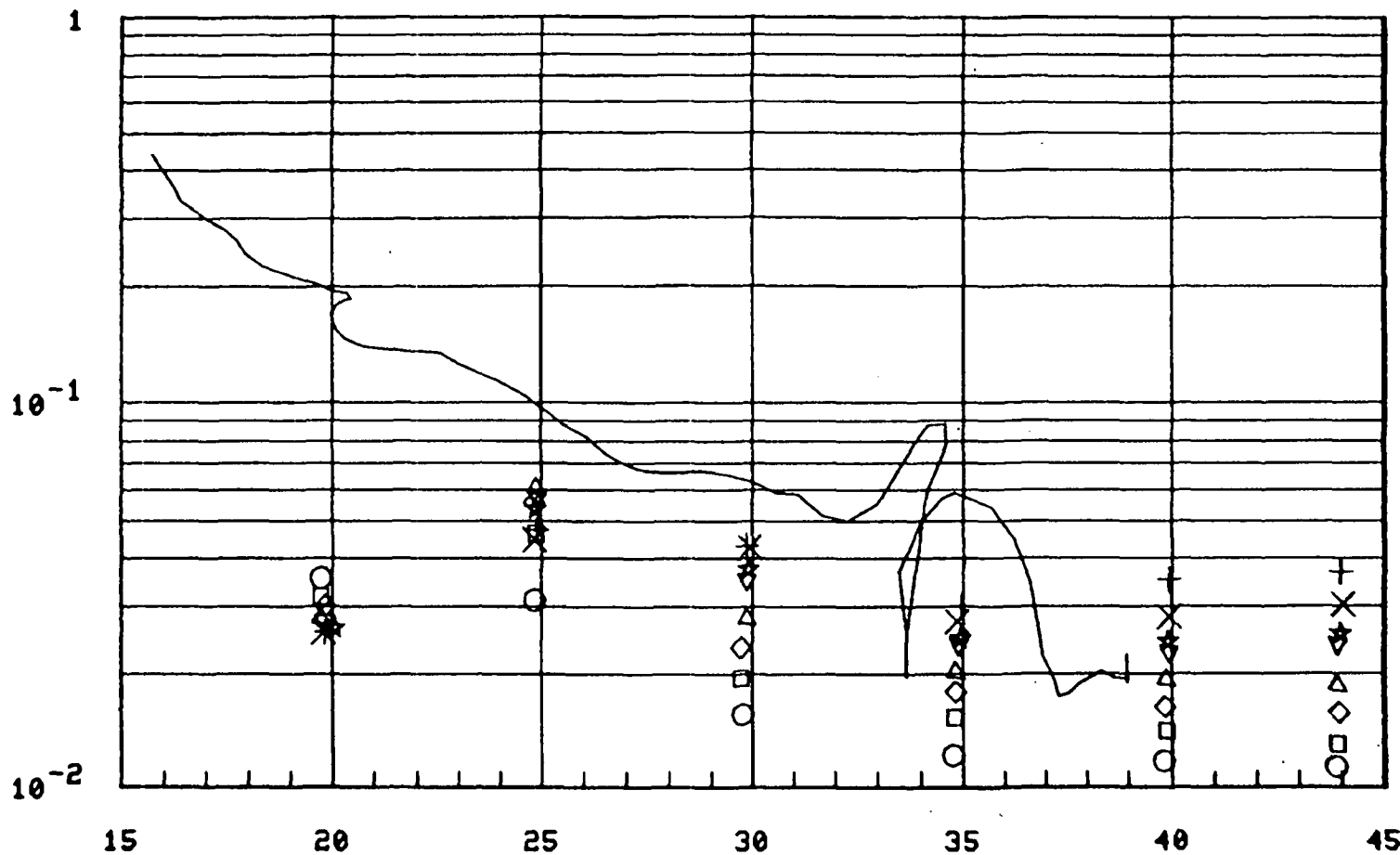
O  
□  
△  
▽  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9899A/H-REF 1065-1500 SEC

LINE COUNT - H-H-REF

B-151



ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 09049744.000 SEC.

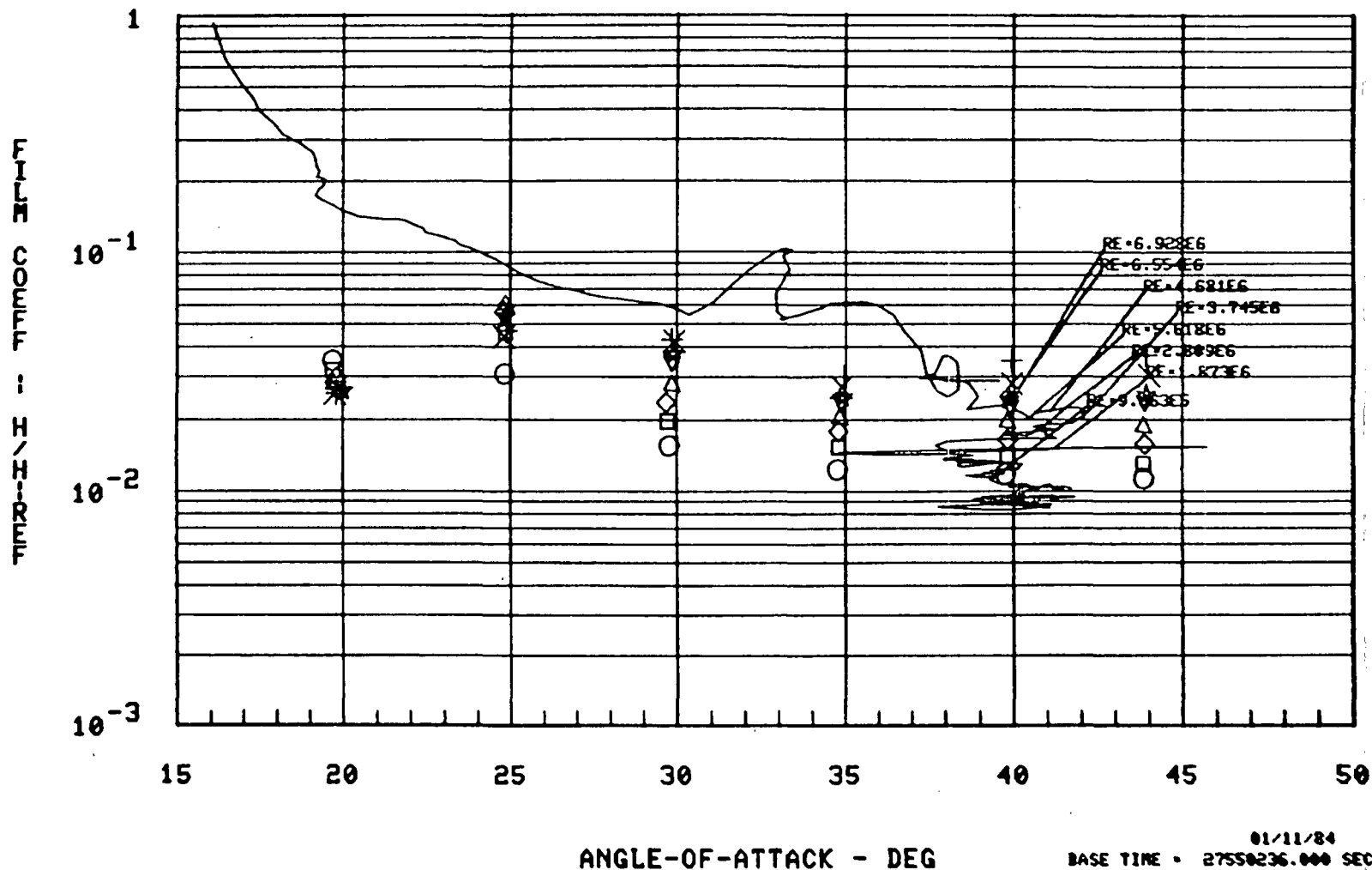


# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U0779899A/H-REF 200-1530 SEC



# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

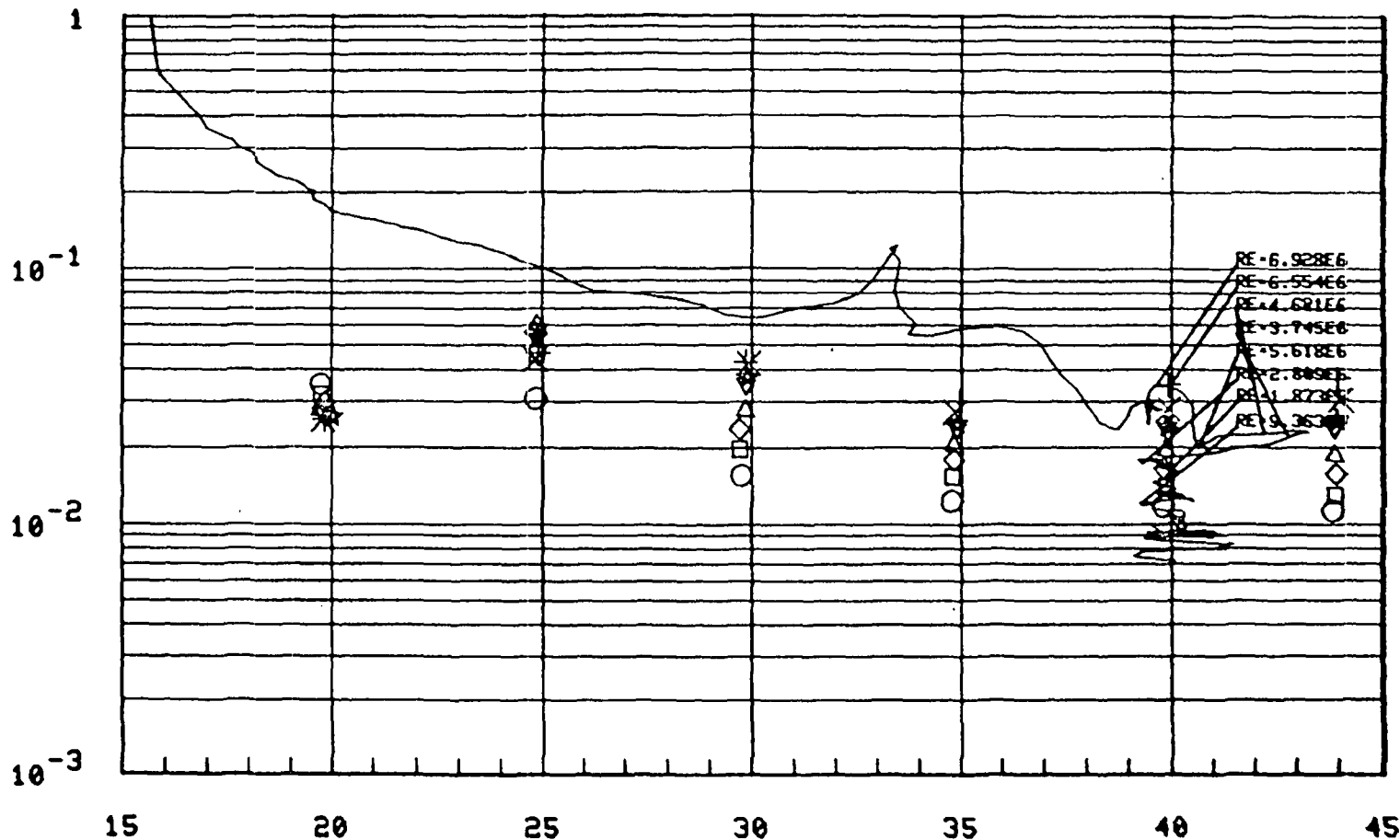
○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9899A/H-REF 200-1440 SEC

B-153

LINE COUNT - IN-IN



ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

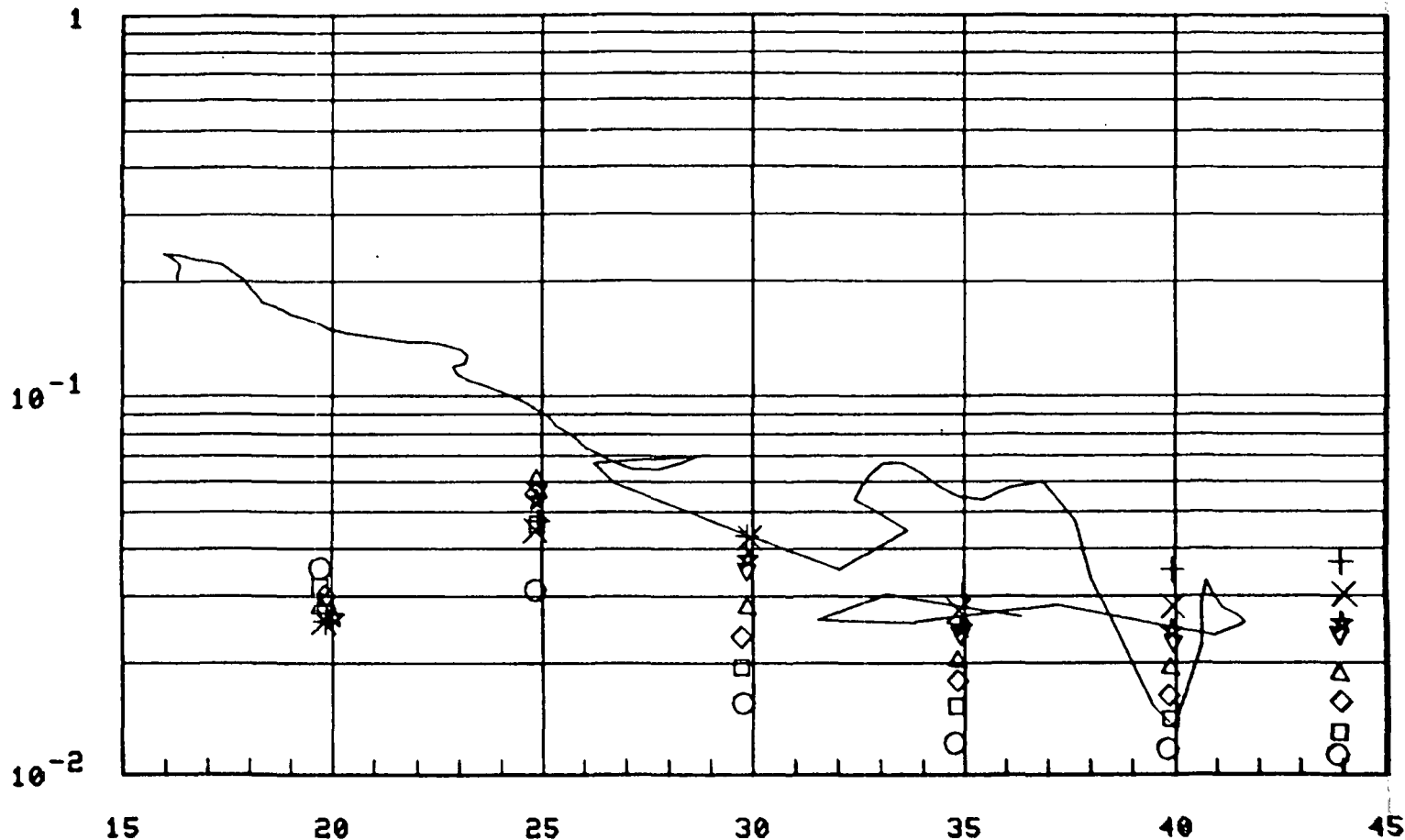
O  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U07T9899A/H-REF 965-1360 SEC

B-154

LINE COUNT - I/I-COUNT



ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME • 16040483.000 SEC.

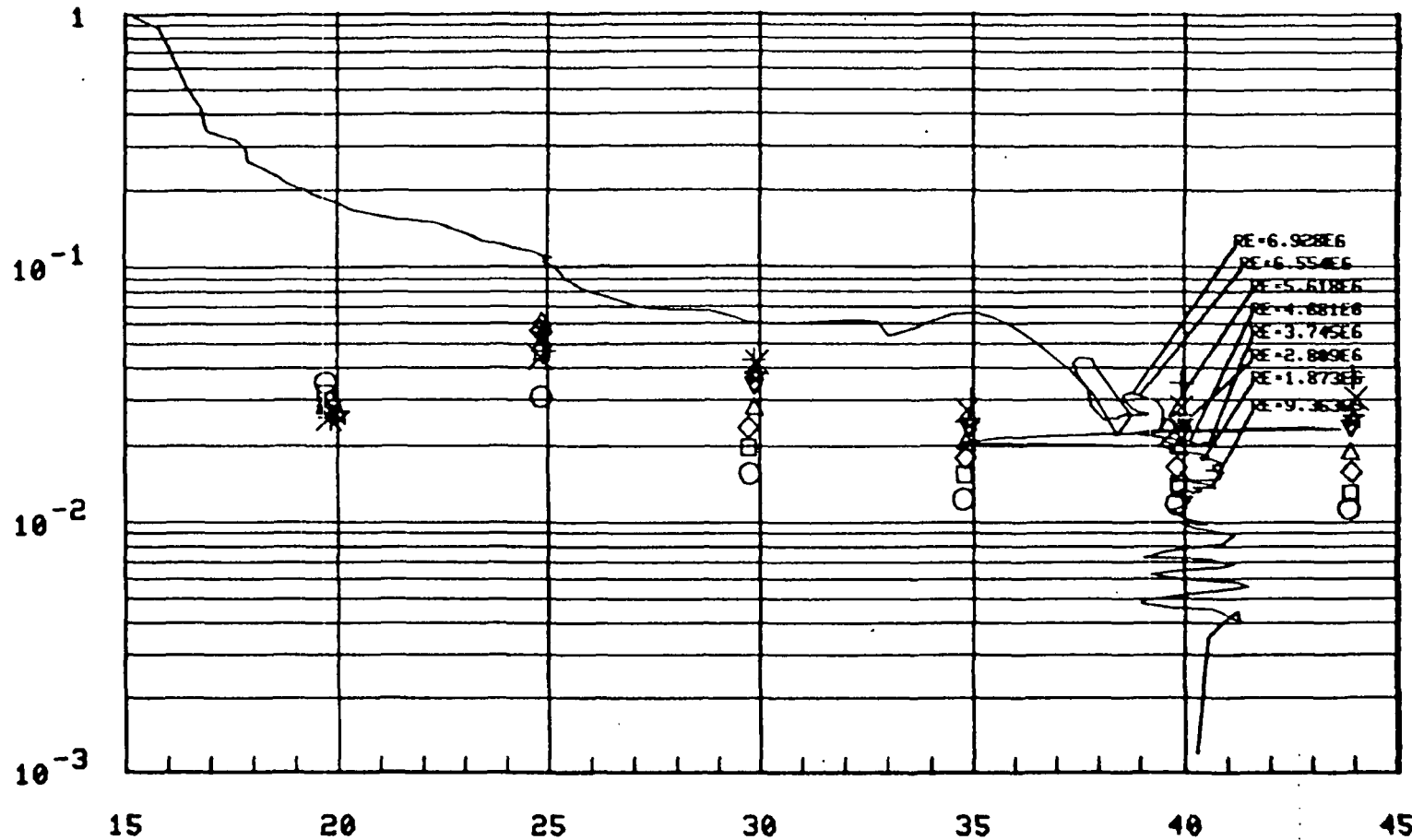
# STS-5 (107 FT LENGTH SIDE FUS X/L=0.45) Z=400

○  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9899A/H-REF 150-1430 SEC

FILE COUNT - H-H-REF



ANGLE-OF-ATTACK - DEG

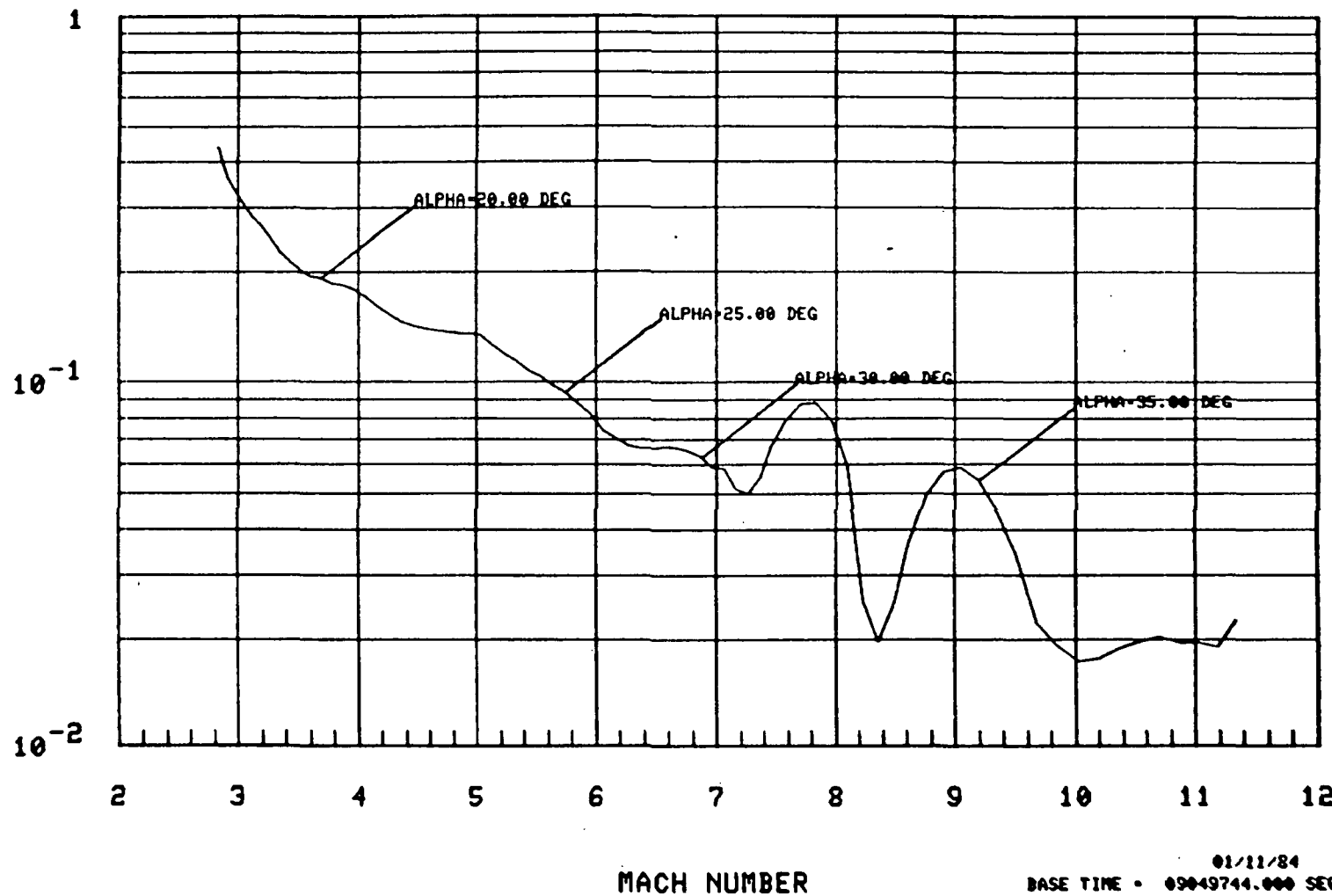
01/12/84  
BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

U07T9899A/H-REF 1065-1500 SEC

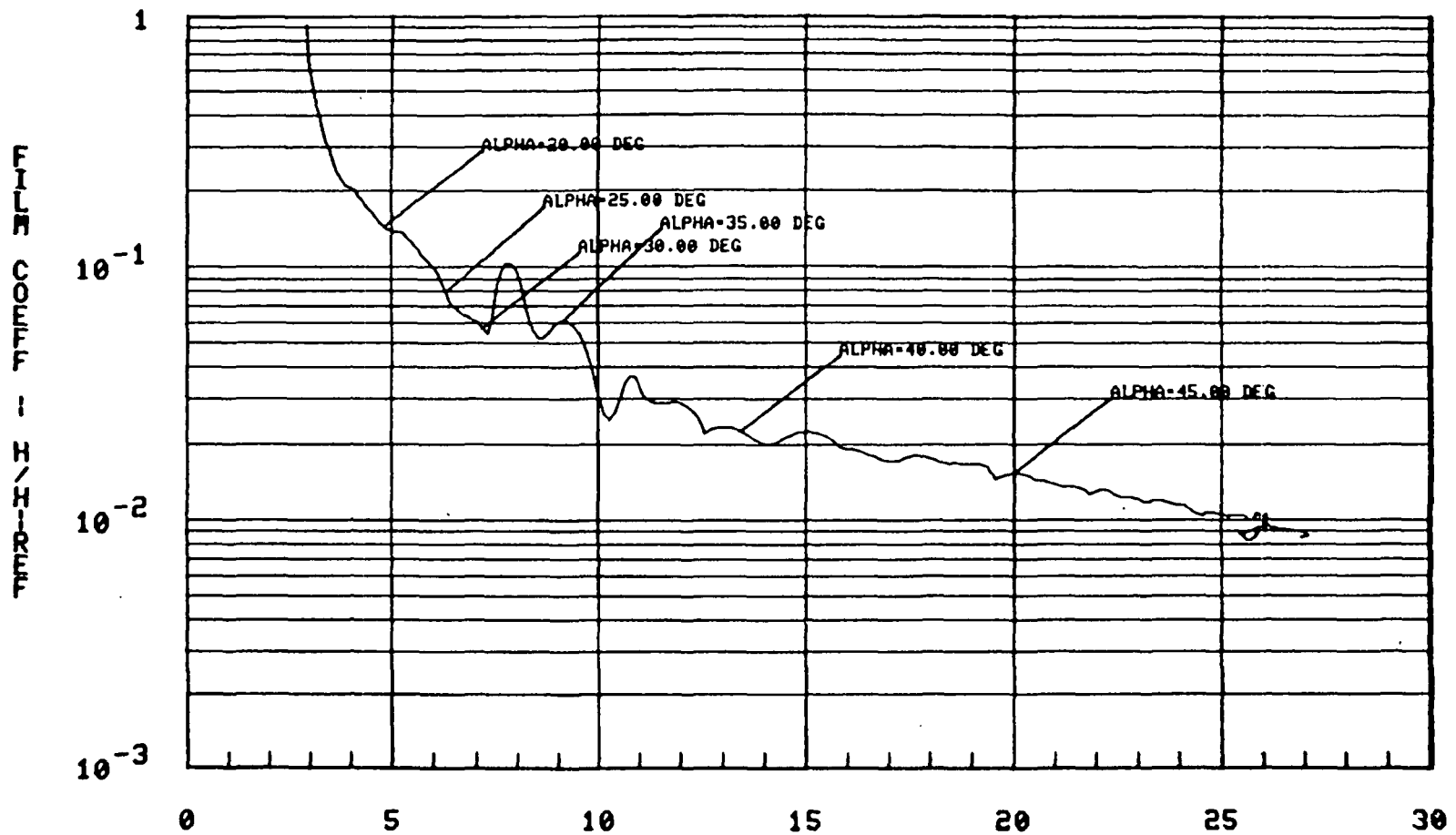
WAKE COEFF -  $H/H_{\infty}$

B-156



# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

U07T9899A/H-REF 200-1530 SEC

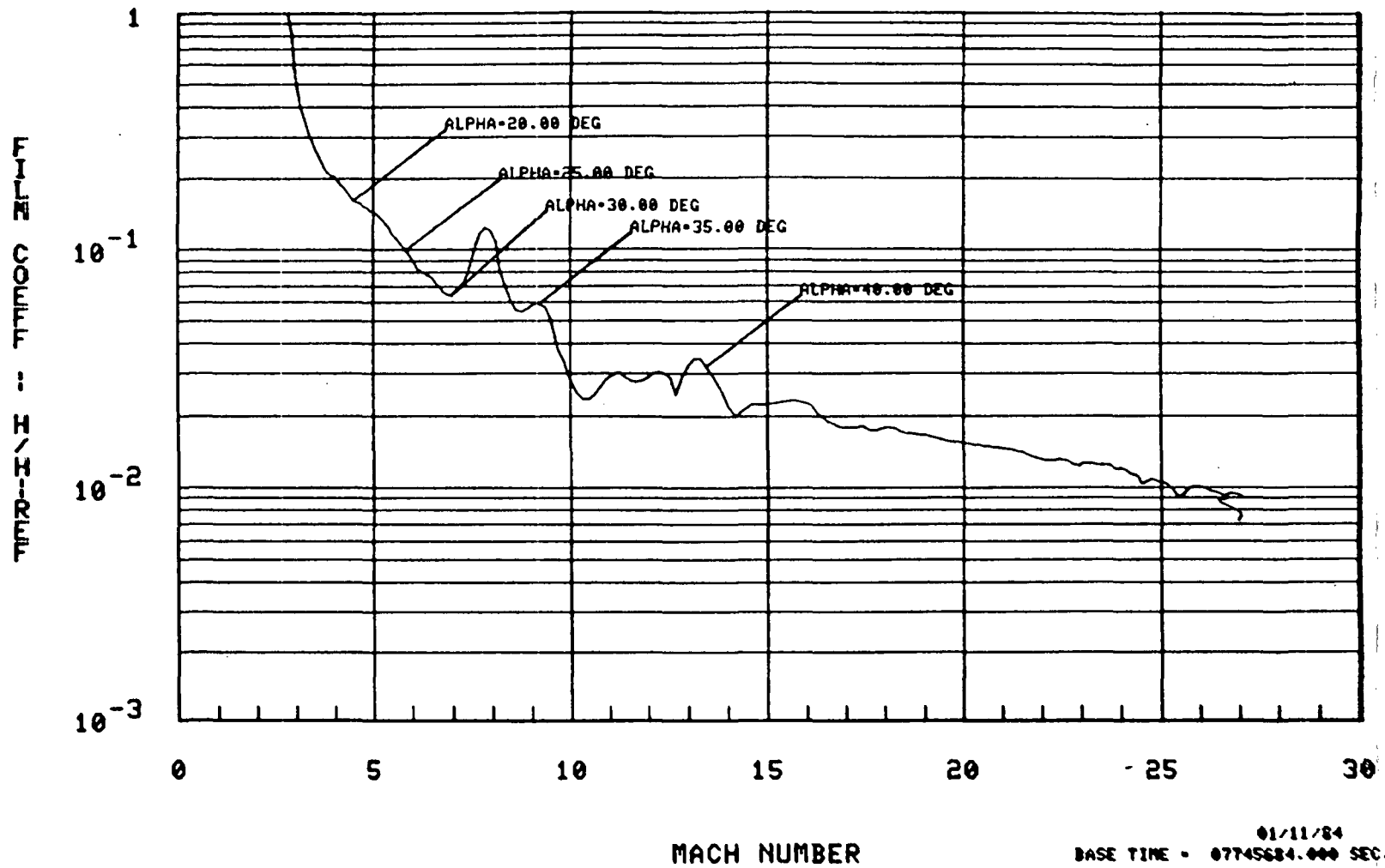


B-157

01/11/84  
BASE TIME = 27550236.000 SEC.

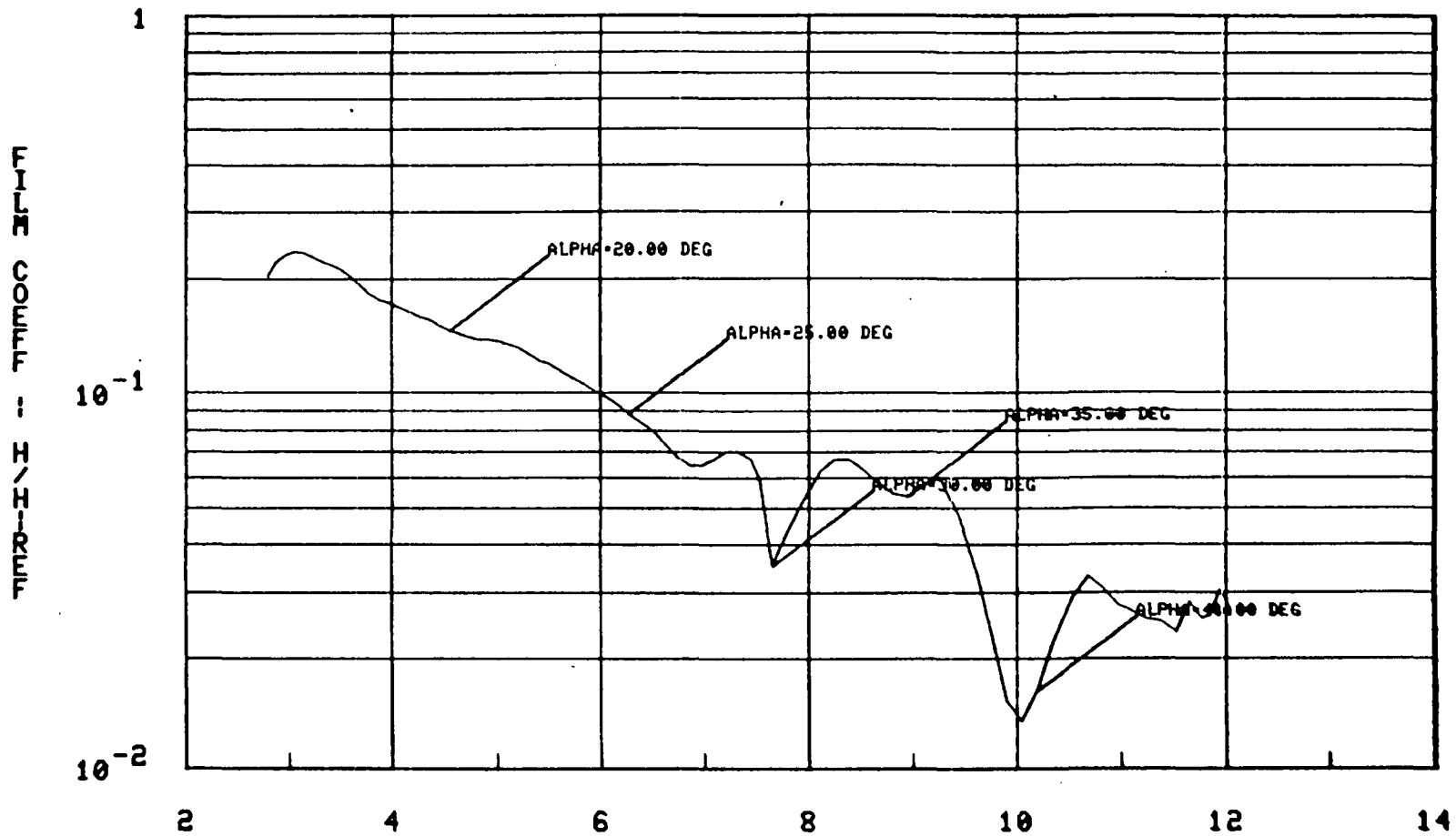
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

U07T9899A/H-REF 200-1440 SEC



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

U07T9899A/H-REF 965-1360 SEC



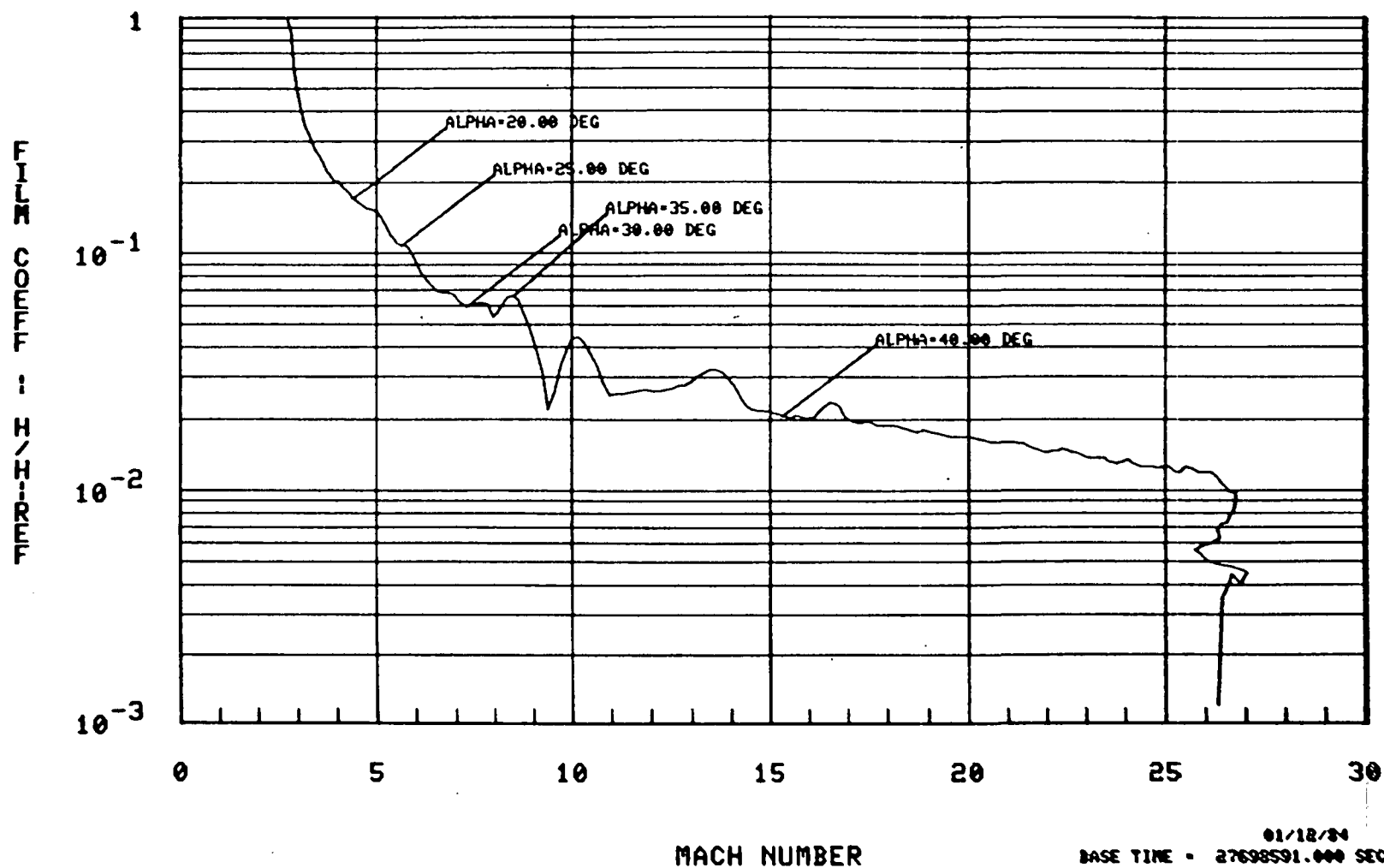
MACH NUMBER

01/12/84  
BASE TIME = 16040423.000 SEC.



# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

U07T9899A/H-REF 150-1430 SEC

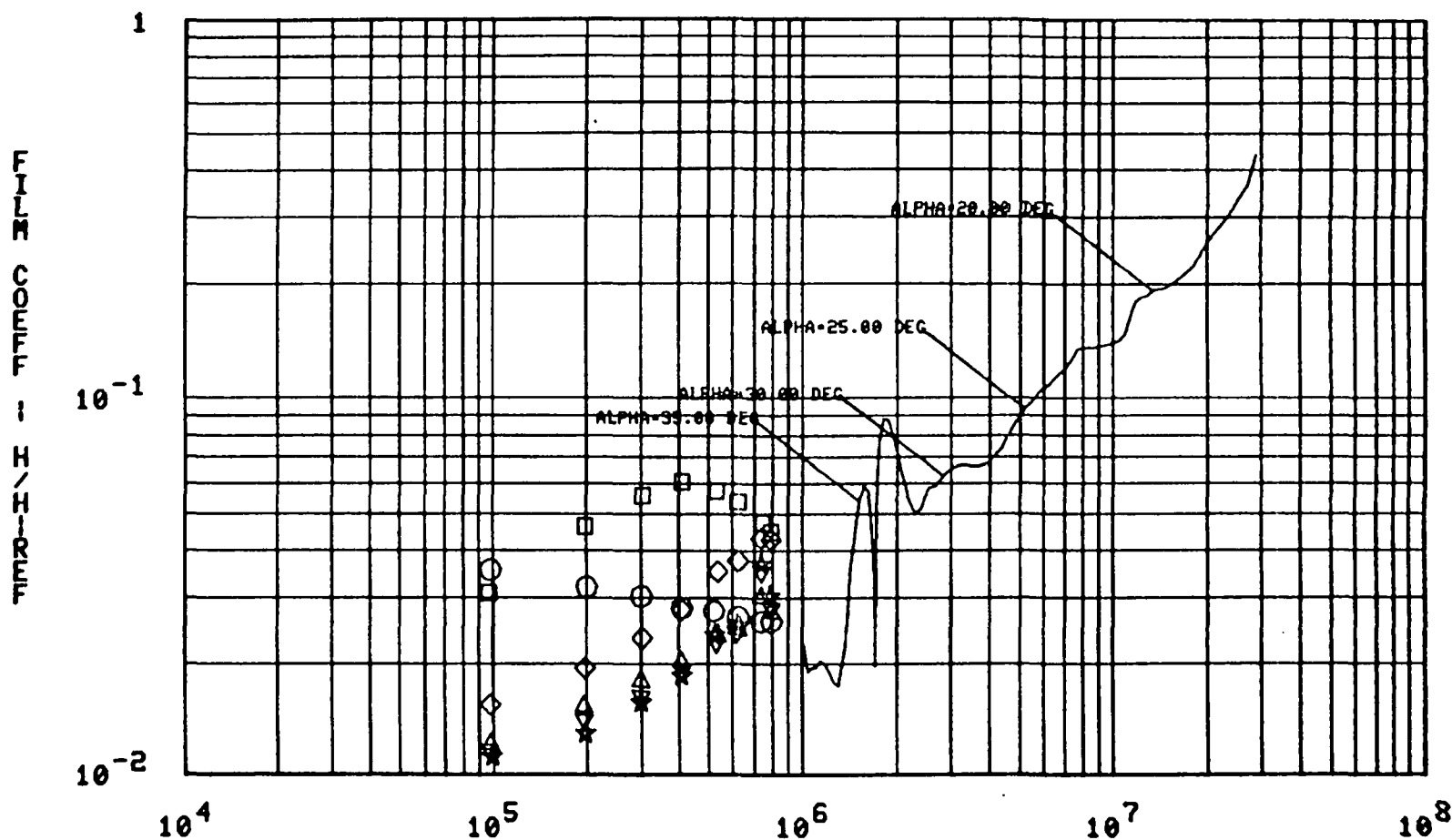


# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9899A/H-REF 1065-1500 SEC



B-161

REYNOLDS NUMBER (NS)

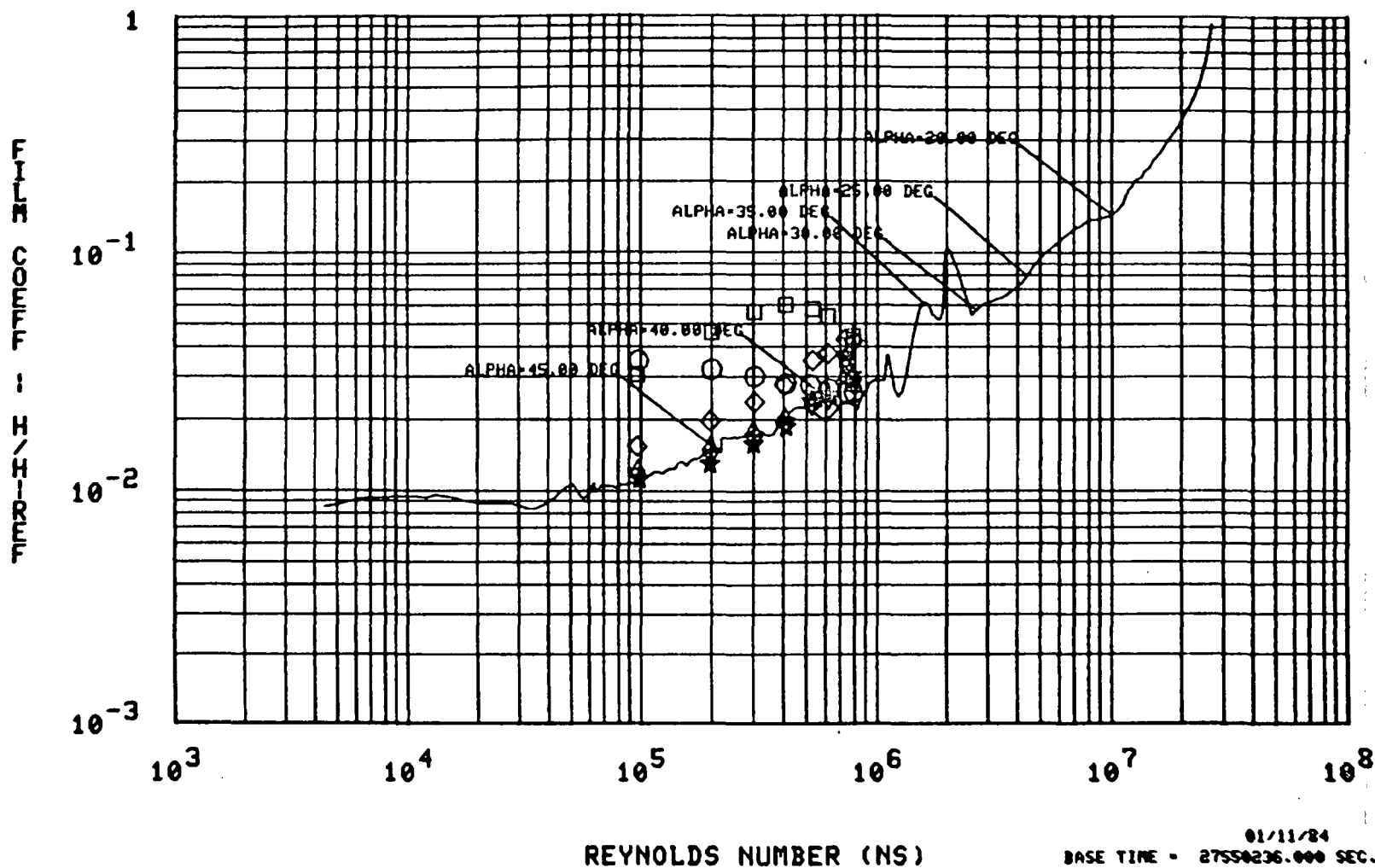
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9899A/H-REF 200-1530 SEC

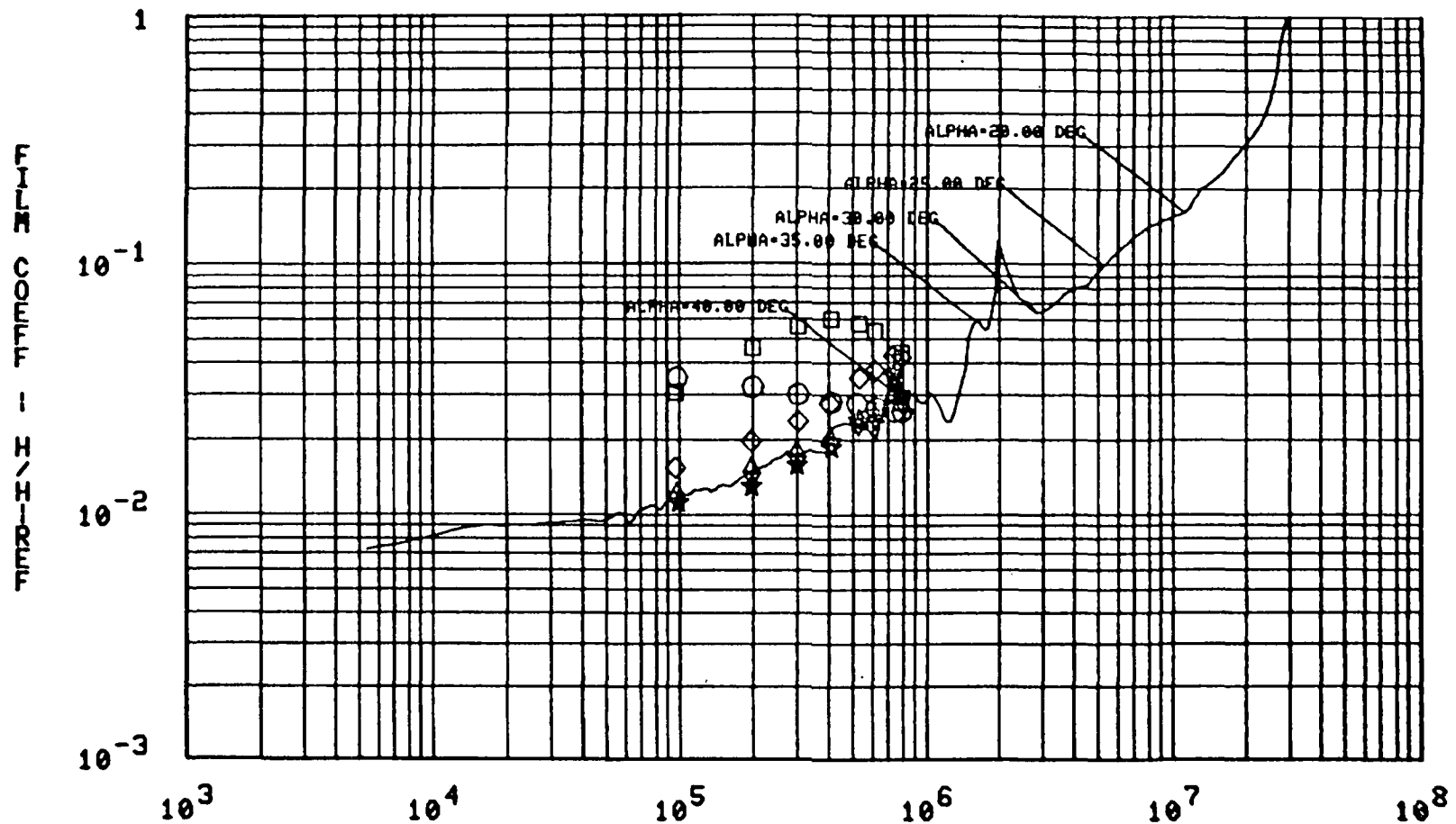


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9899A/H-REF 200-1440 SEC



B-163

REYNOLDS NUMBER (NS)

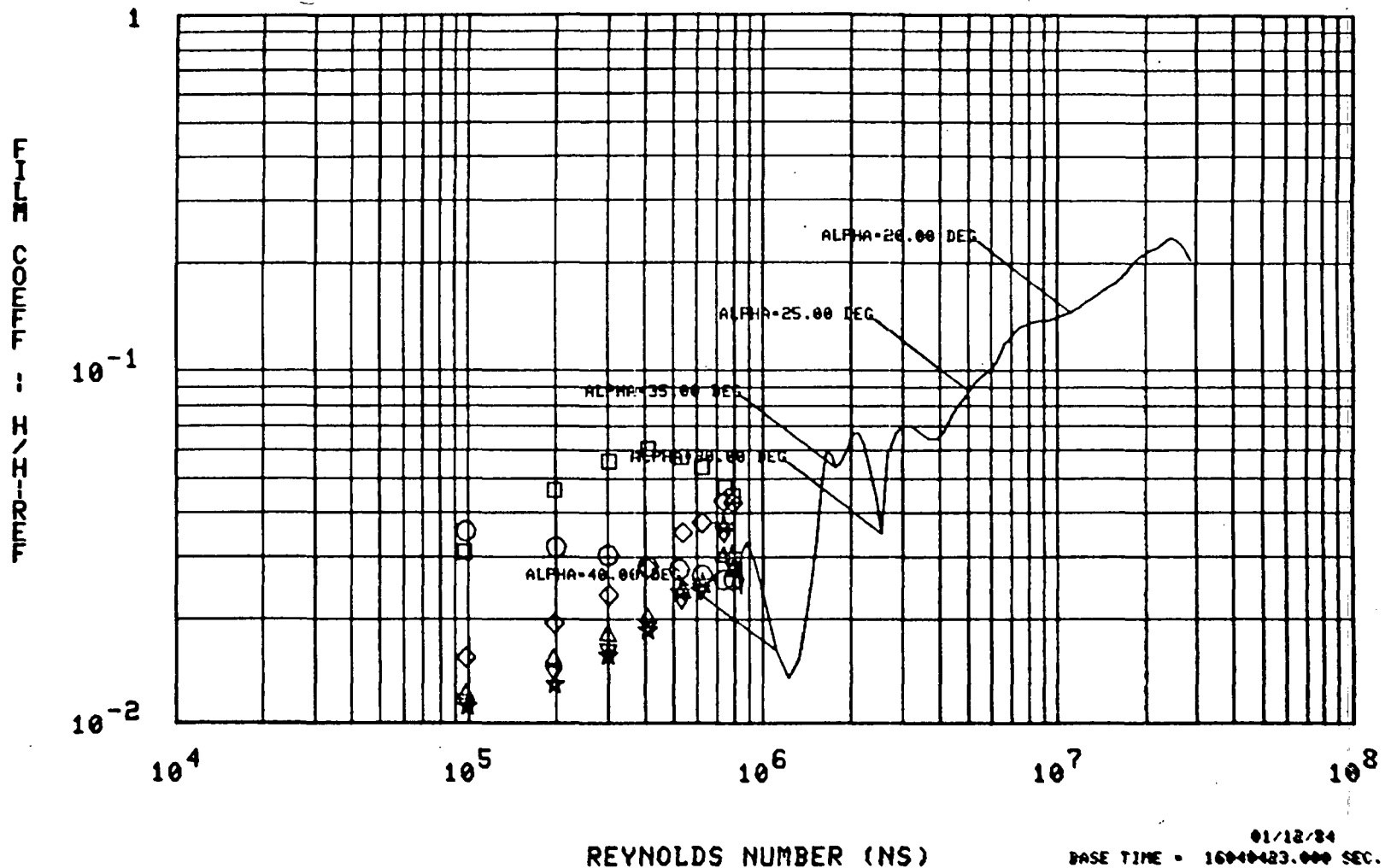
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9899A/H-REF 965-1360 SEC



B-164

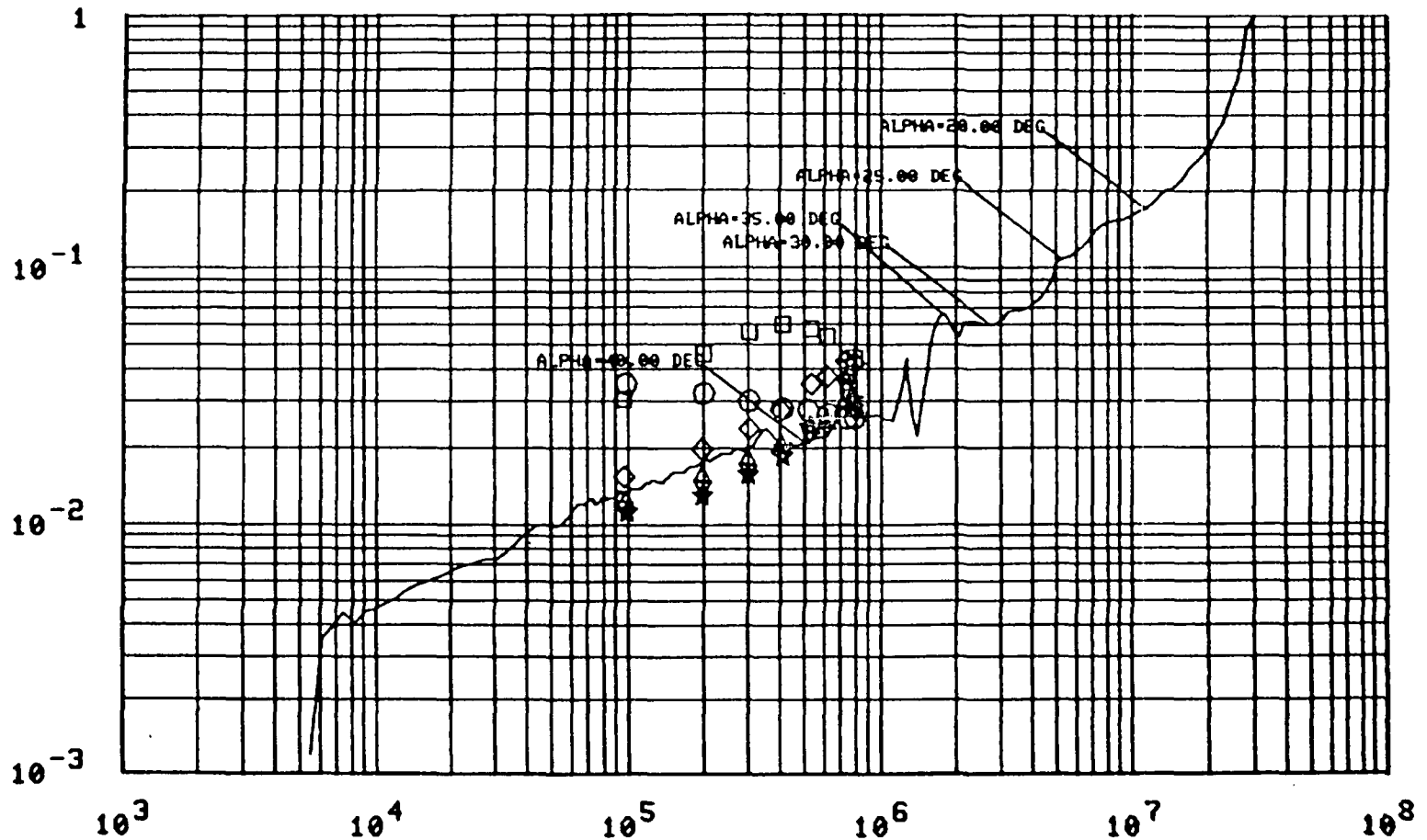
STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9899A/H-REF 150-1430 SEC

FILE CODE - H/H-REF

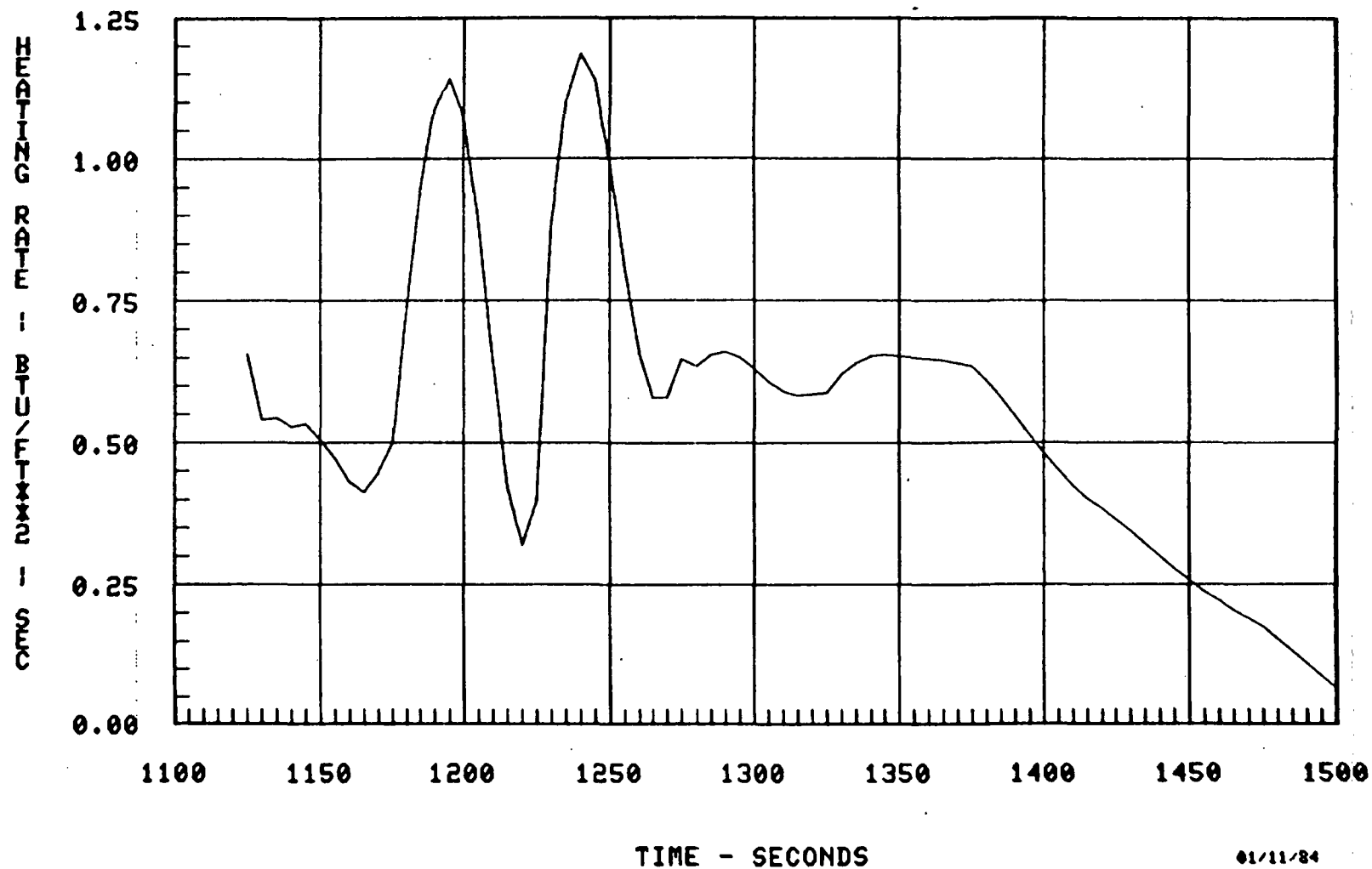


REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.45$ ) $Z=400$

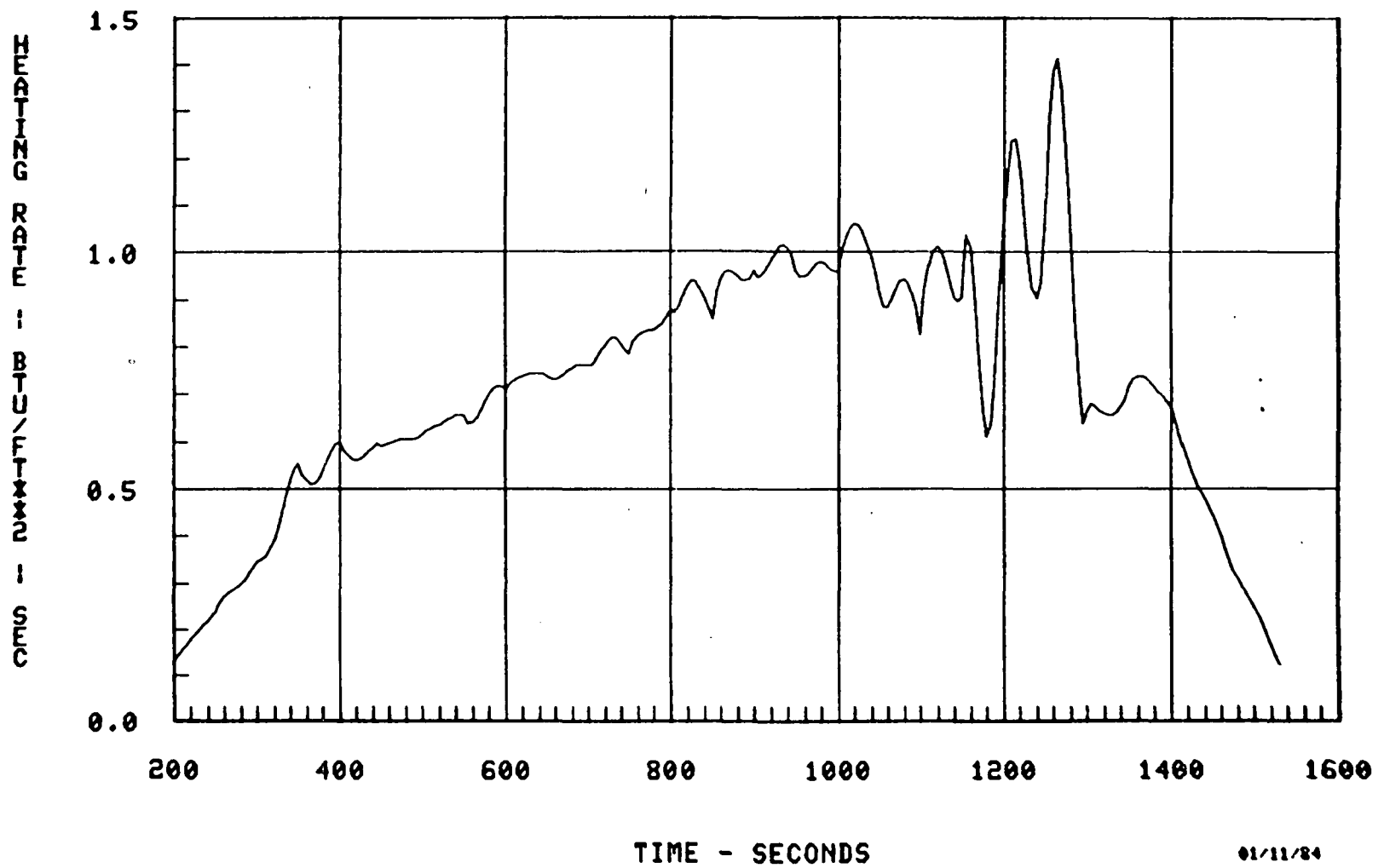
U07T9899A



B-166

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

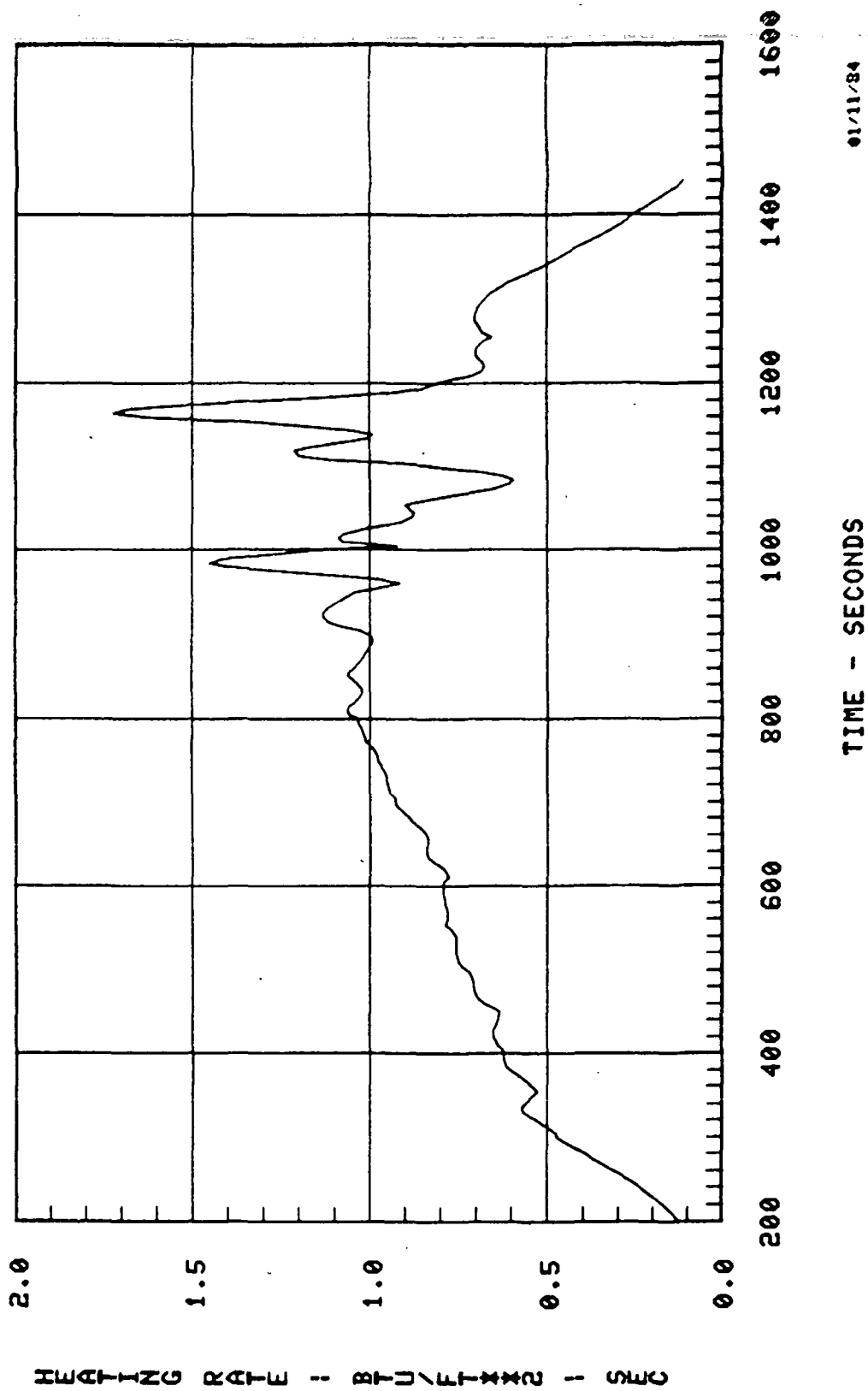
U07T9899A





STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

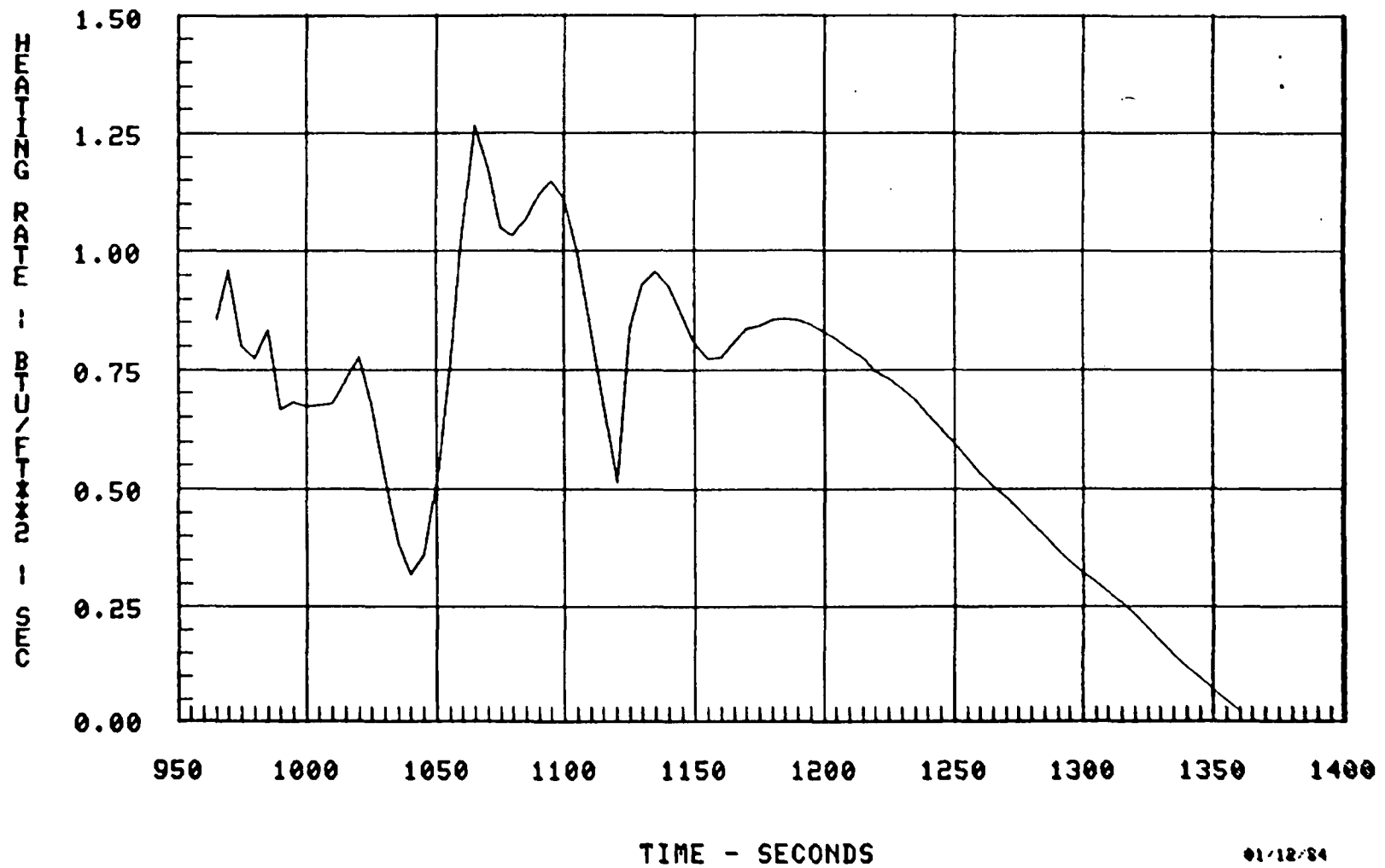
U07T9899A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

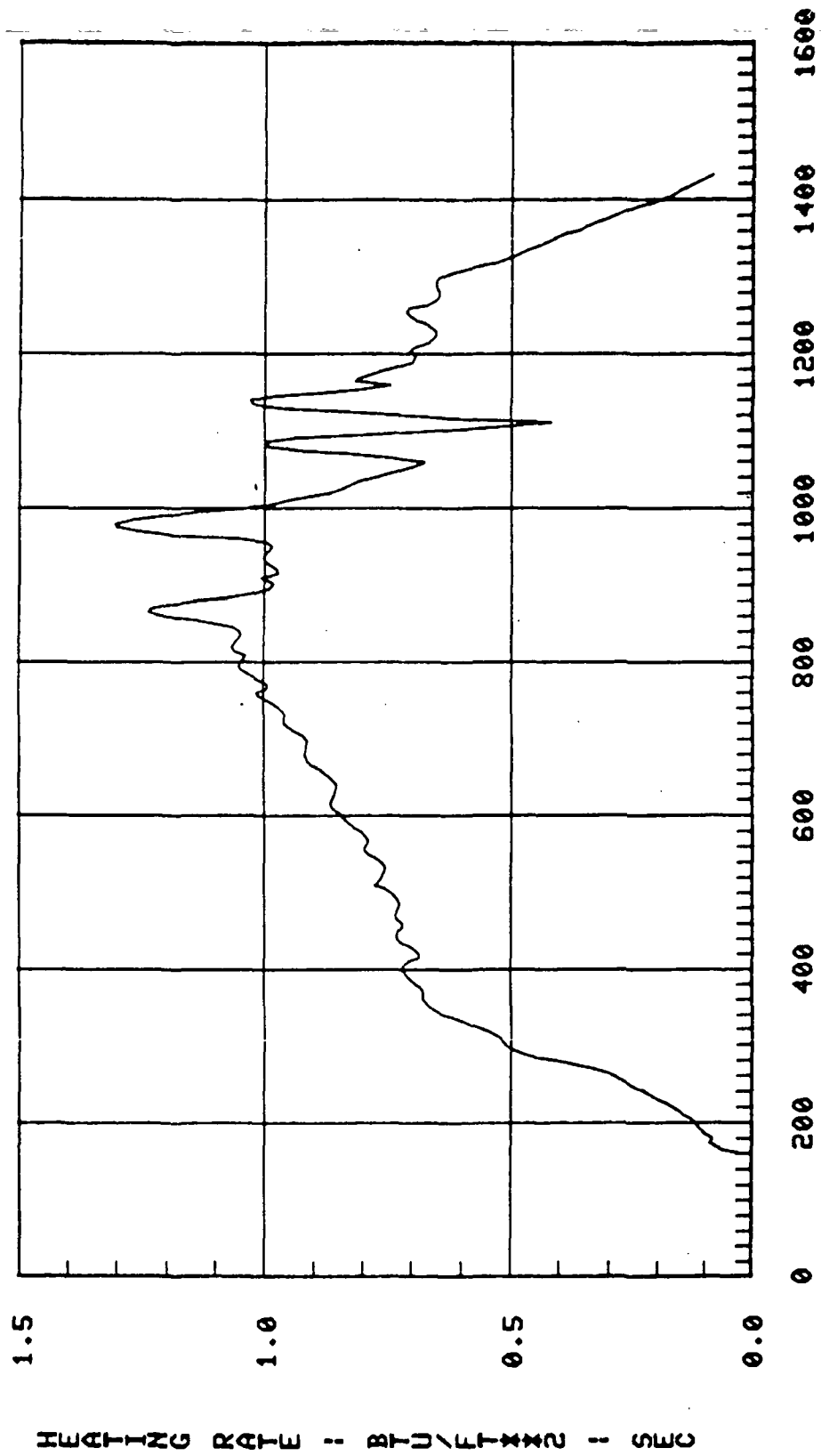
U07T9899A

B-169



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

U07T9899A

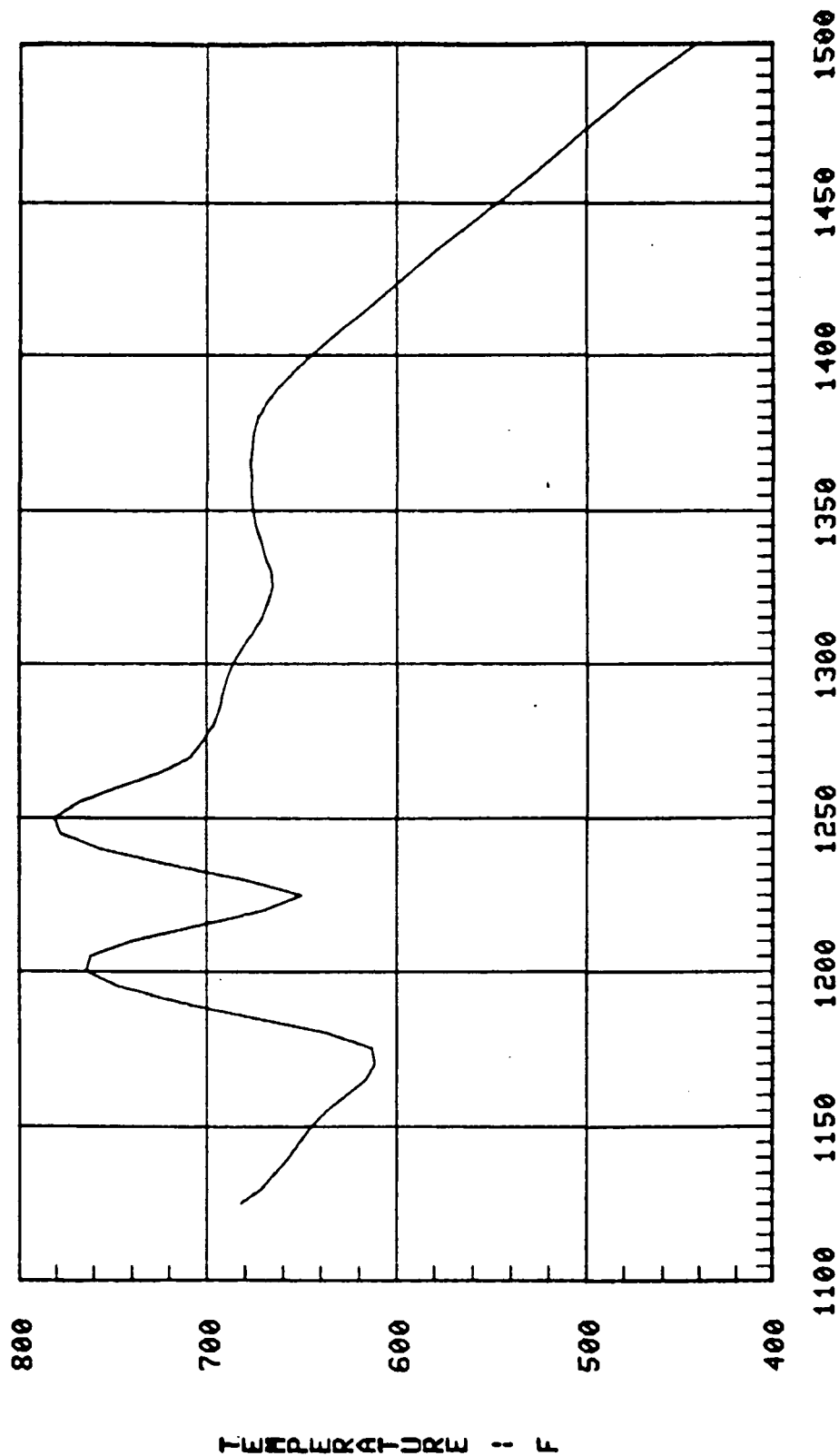


TIME - SECONDS

01/12/84

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.45$ ) Z=400

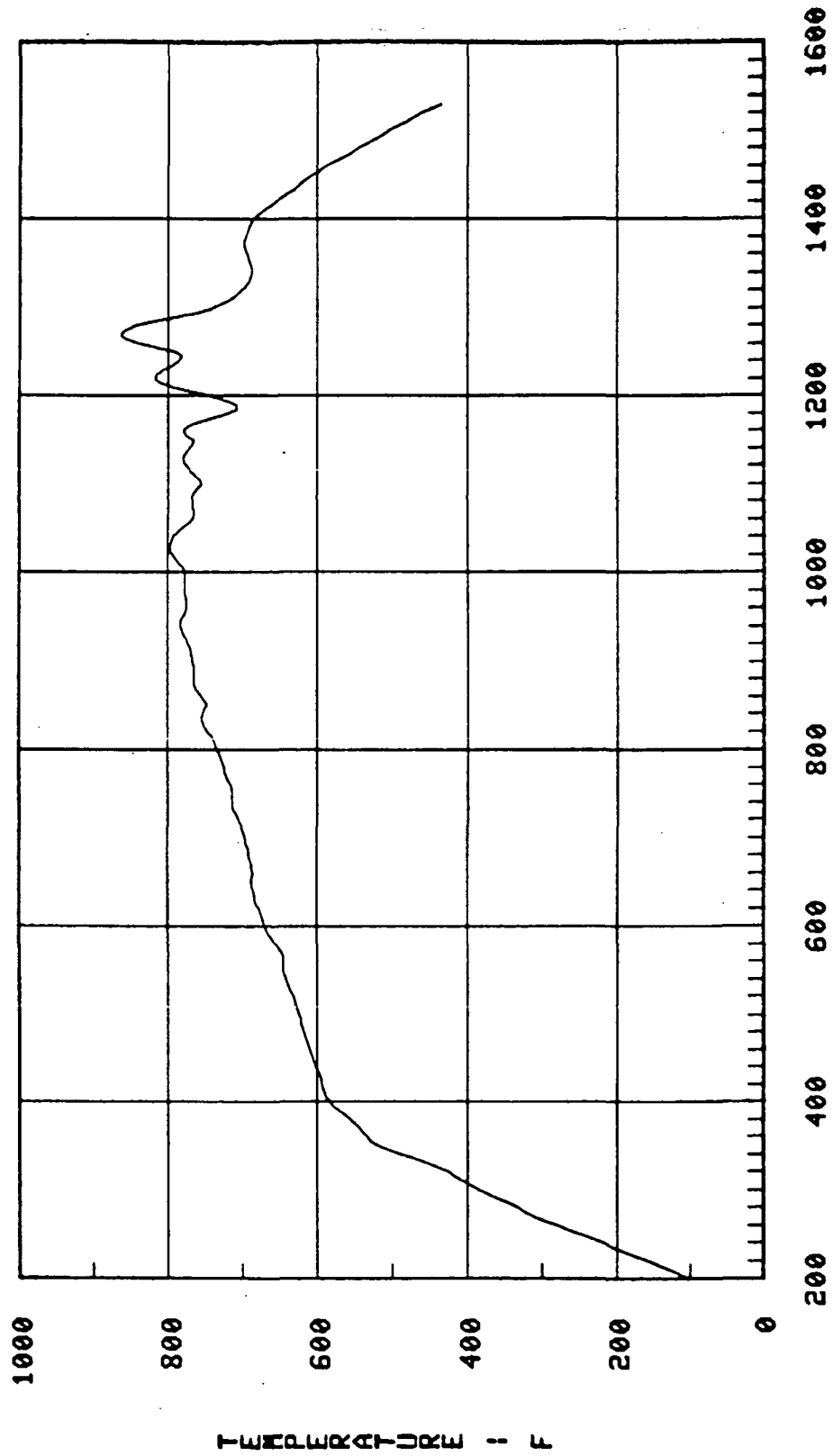
U0779899A



01/11/84

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

U07T9899A

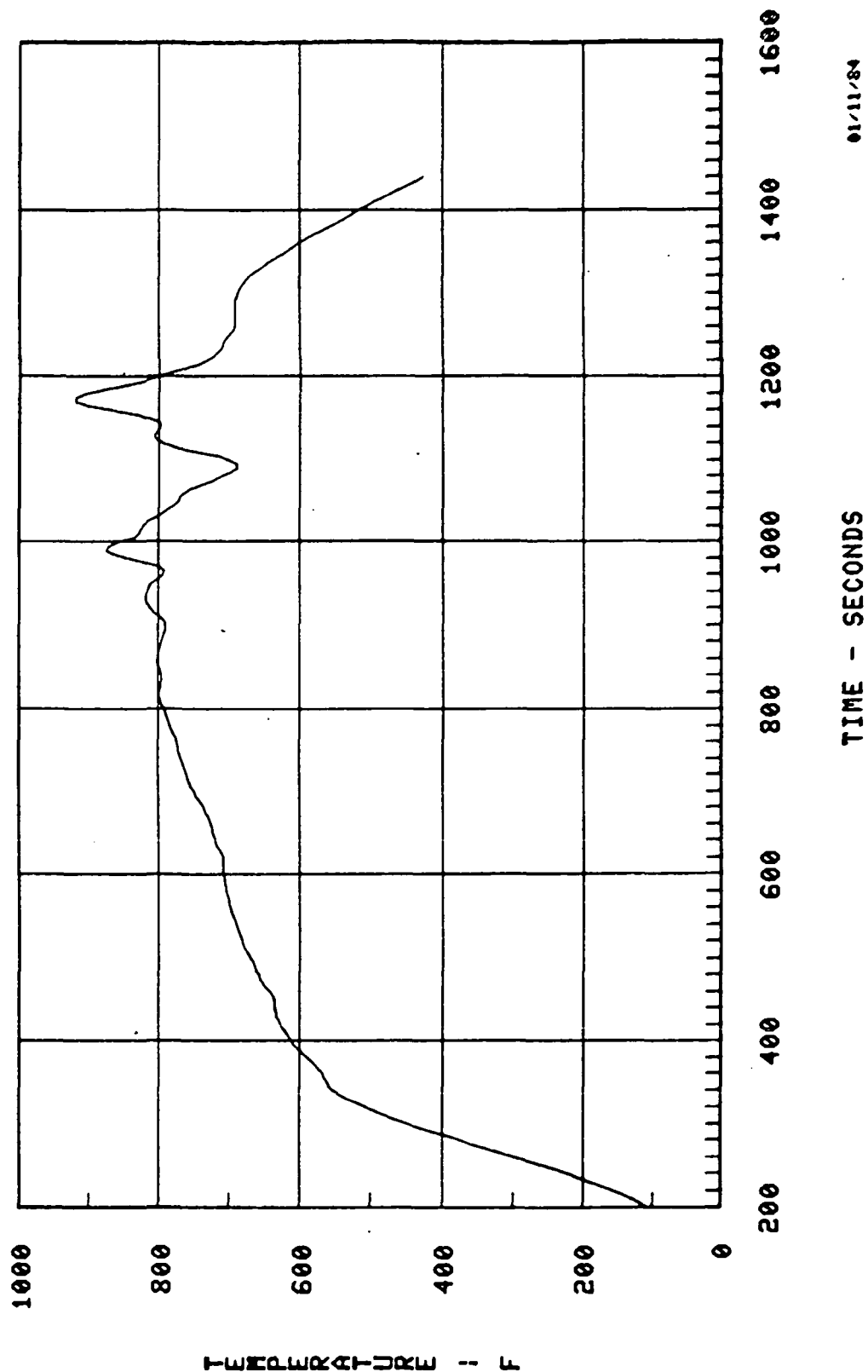


TIME - SECONDS

01/11/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

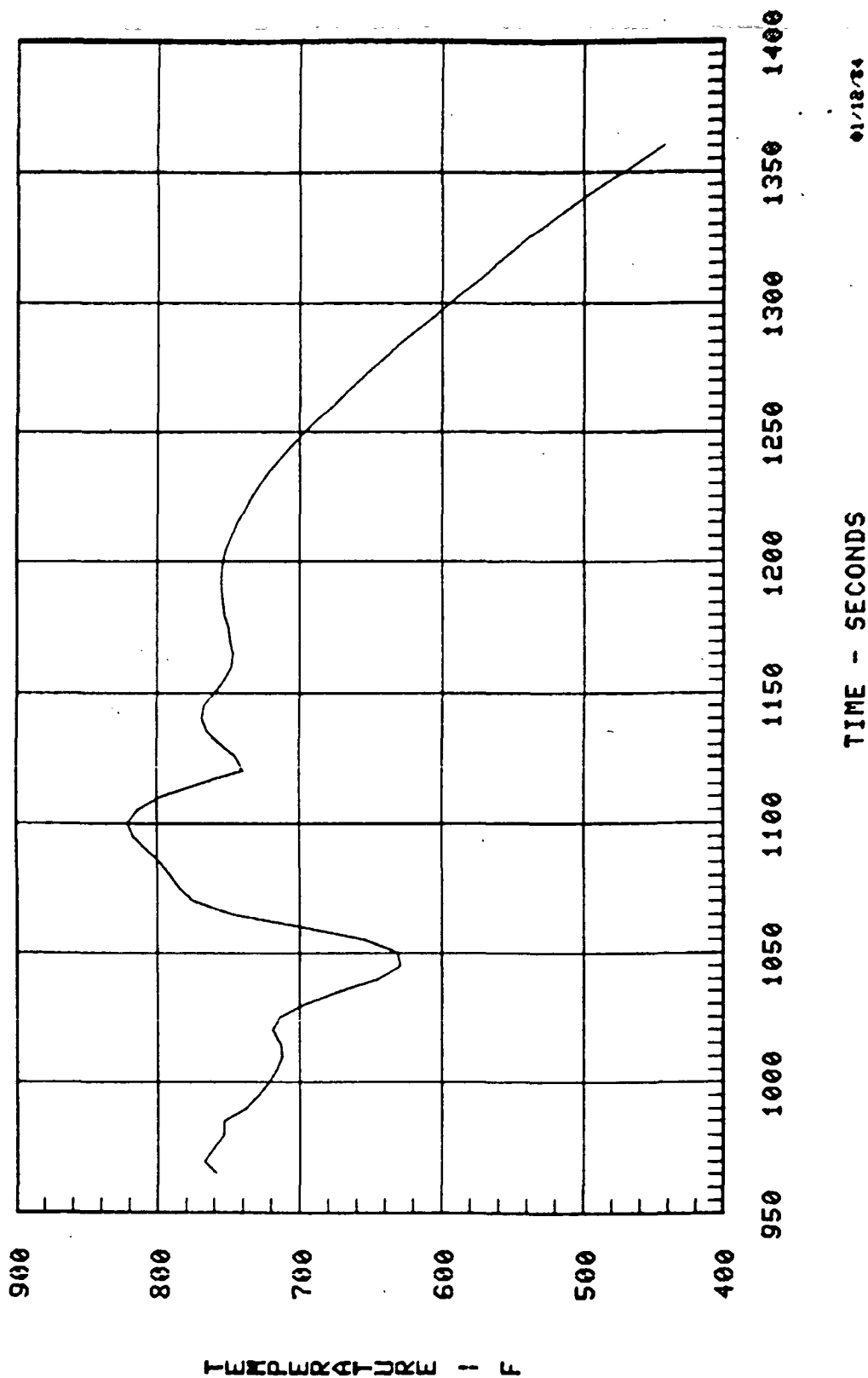
U0779899A



01/11/84

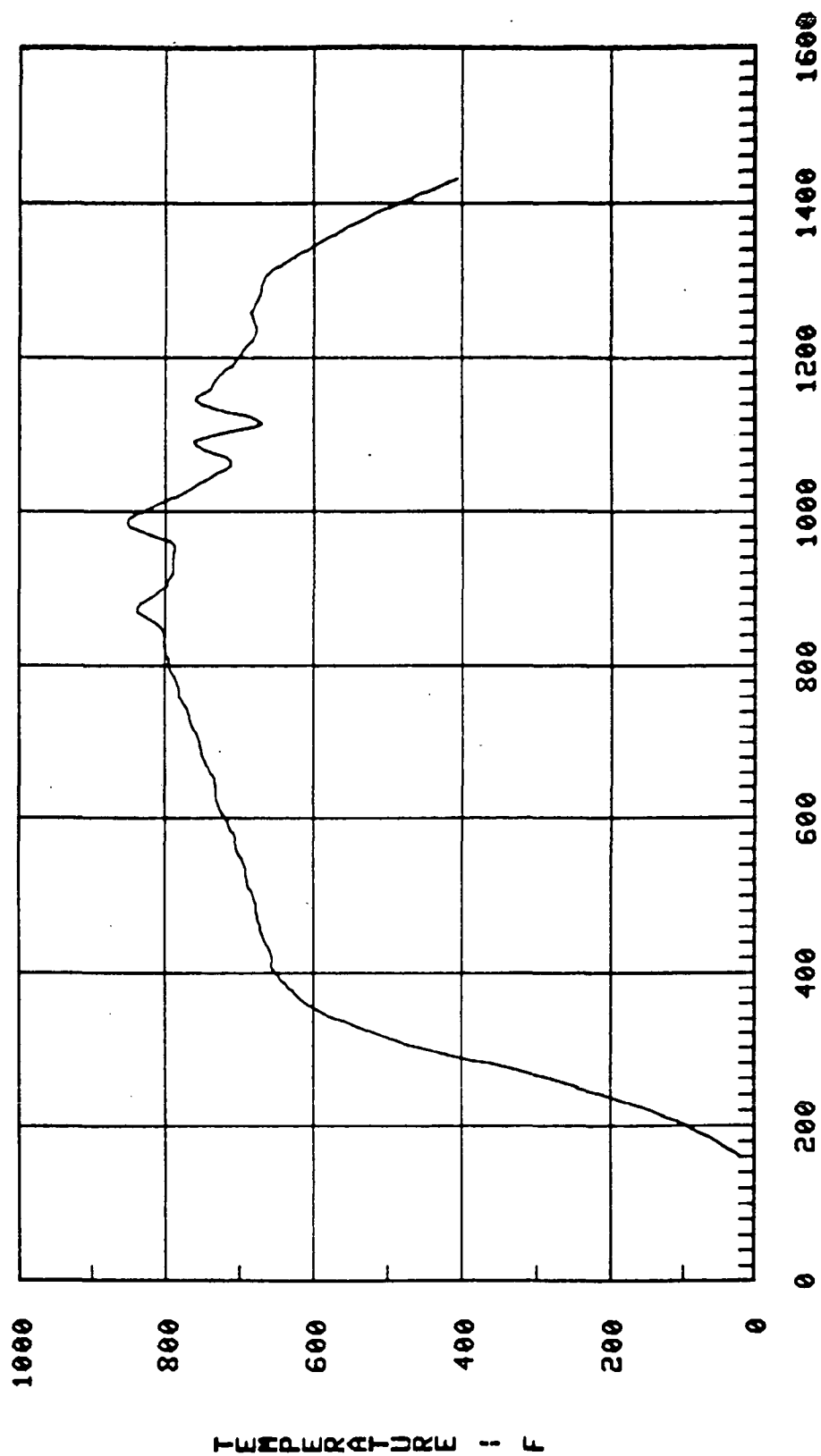
STS-4 (107 FT LENGTH SIDE FUS X/L=0.45) Z=400

U07T9899A



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.45$ )  $Z=400$

U07T9899A



01/12/84

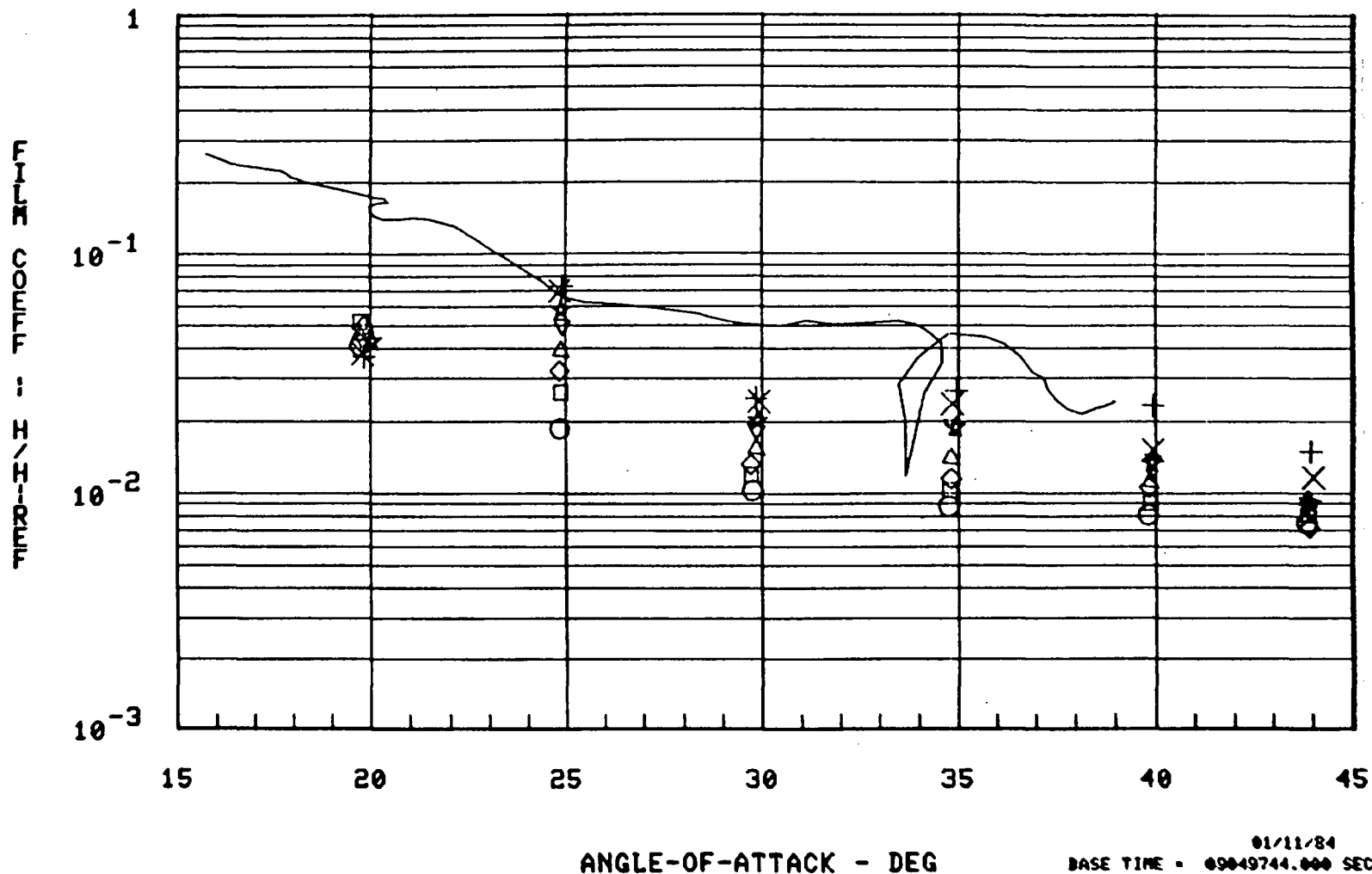


# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

○  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9901A/H-REF 1065-1500 SEC



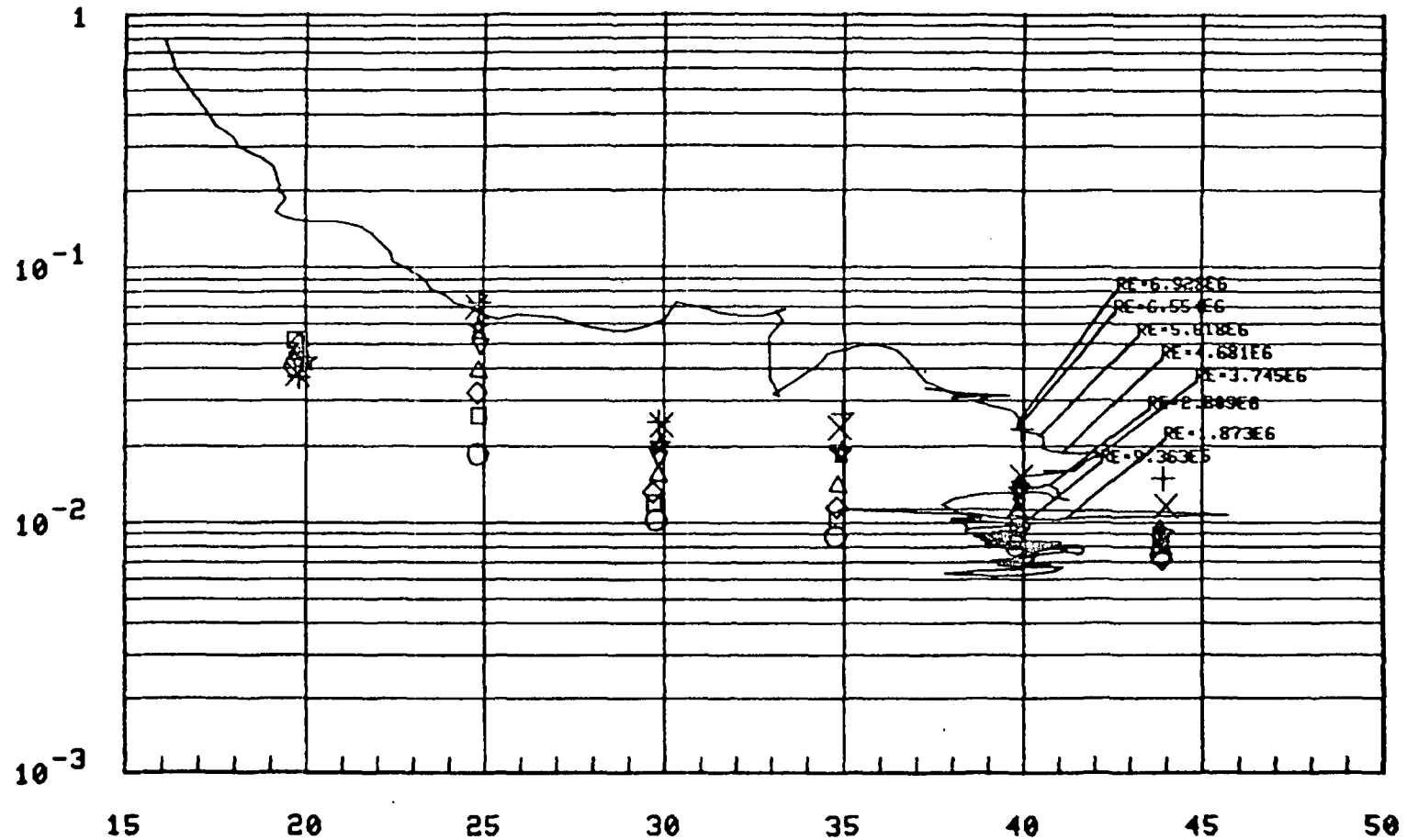
# STS-2 (107 FT LENGTH SIDE FUS X/L=0.50) Z=400

O  
□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9901A/H-REF 200-1530 SEC

FILE COUNT - H/H-KILL



B-177

ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 27550236.000 SEC.

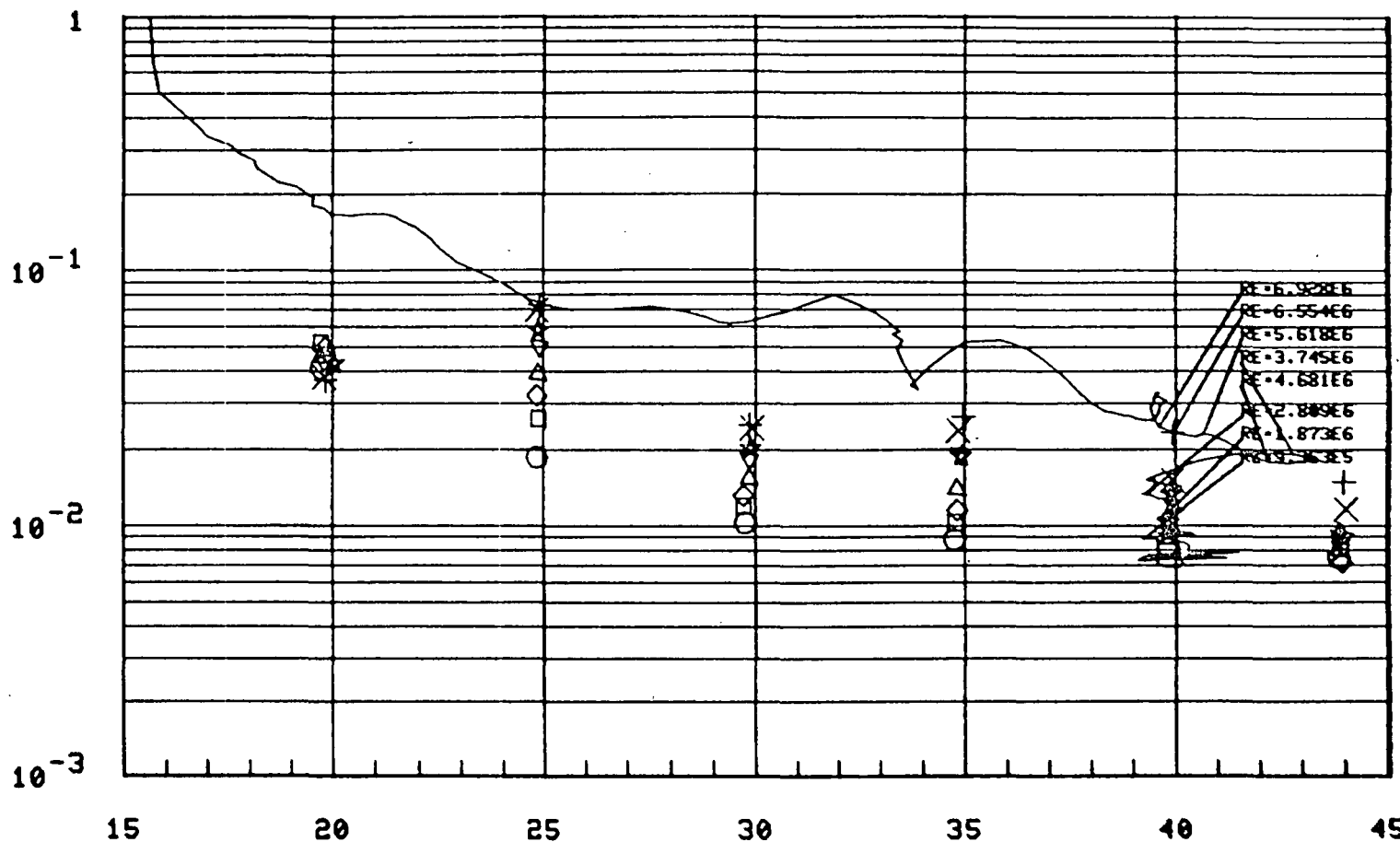
# STS-3 (107 FT LENGTH SIDE FUS X/L=0.50) Z=400

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9901A/H-REF 200-1440 SEC

O  
◇  
△  
▽  
★  
+  
X

LINE COUNT - I/I-COUNT



ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 07745684.000 SEC.

```
OH74 0.0175 SCALE RE = 0.5 E06
OH74 0.0175 SCALE RE = 1.0 E06
OH74 0.0175 SCALE RE = 1.5 E06
OH74 0.0175 SCALE RE = 2.0 E06
OH74 0.0175 SCALE RE = 2.5 E06
OH74 0.0175 SCALE RE = 3.0 E06
OH74 0.0175 SCALE RE = 3.5 E06
OH74 0.0175 SCALE RE = 3.7 E06
```

○□◇△▽☆✚✕



ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME • 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

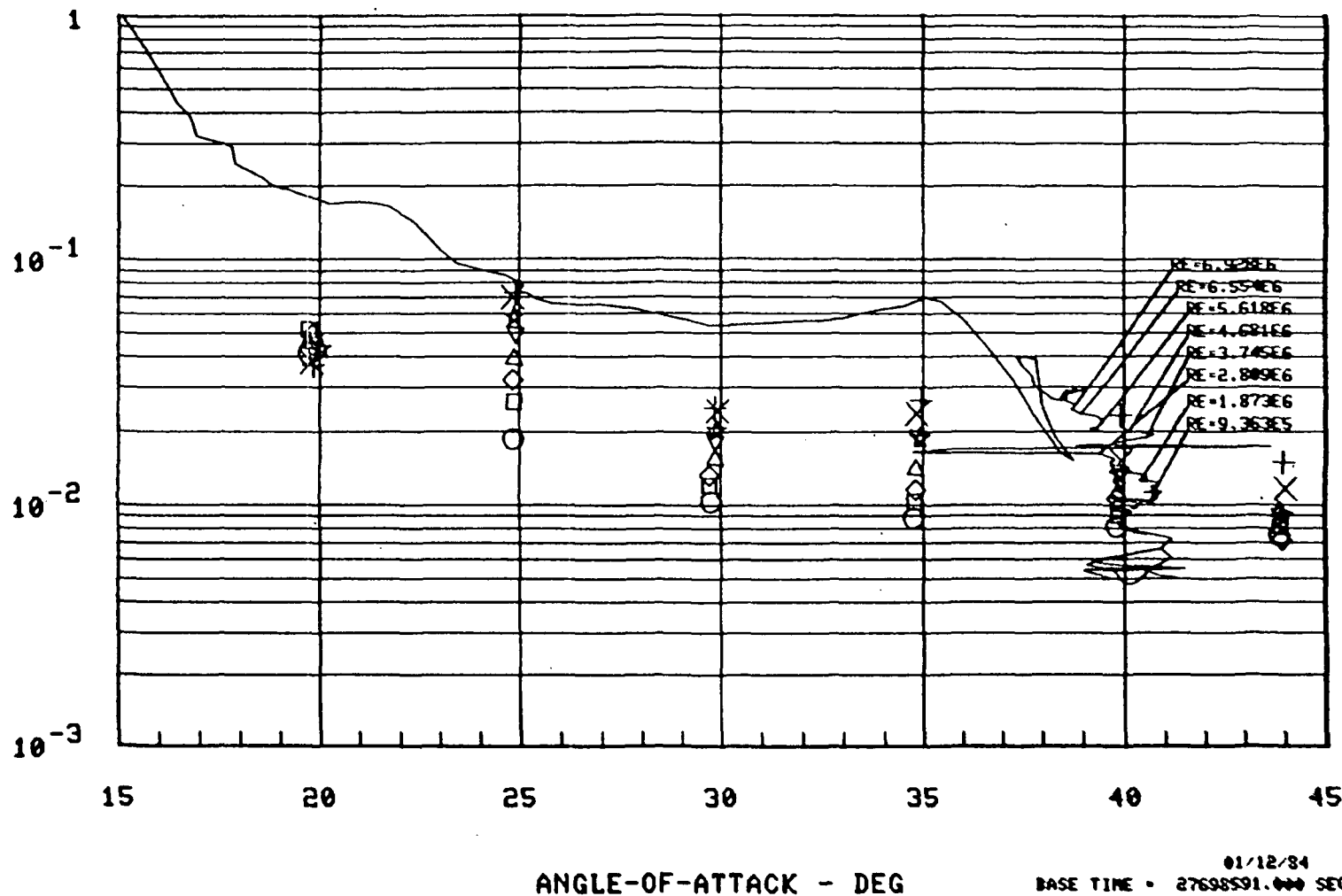
OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9901A/H-REF 150-1430 SEC

○  
◇  
△  
★  
+  
X

LINE COUNT -- H/H-REF

B-180

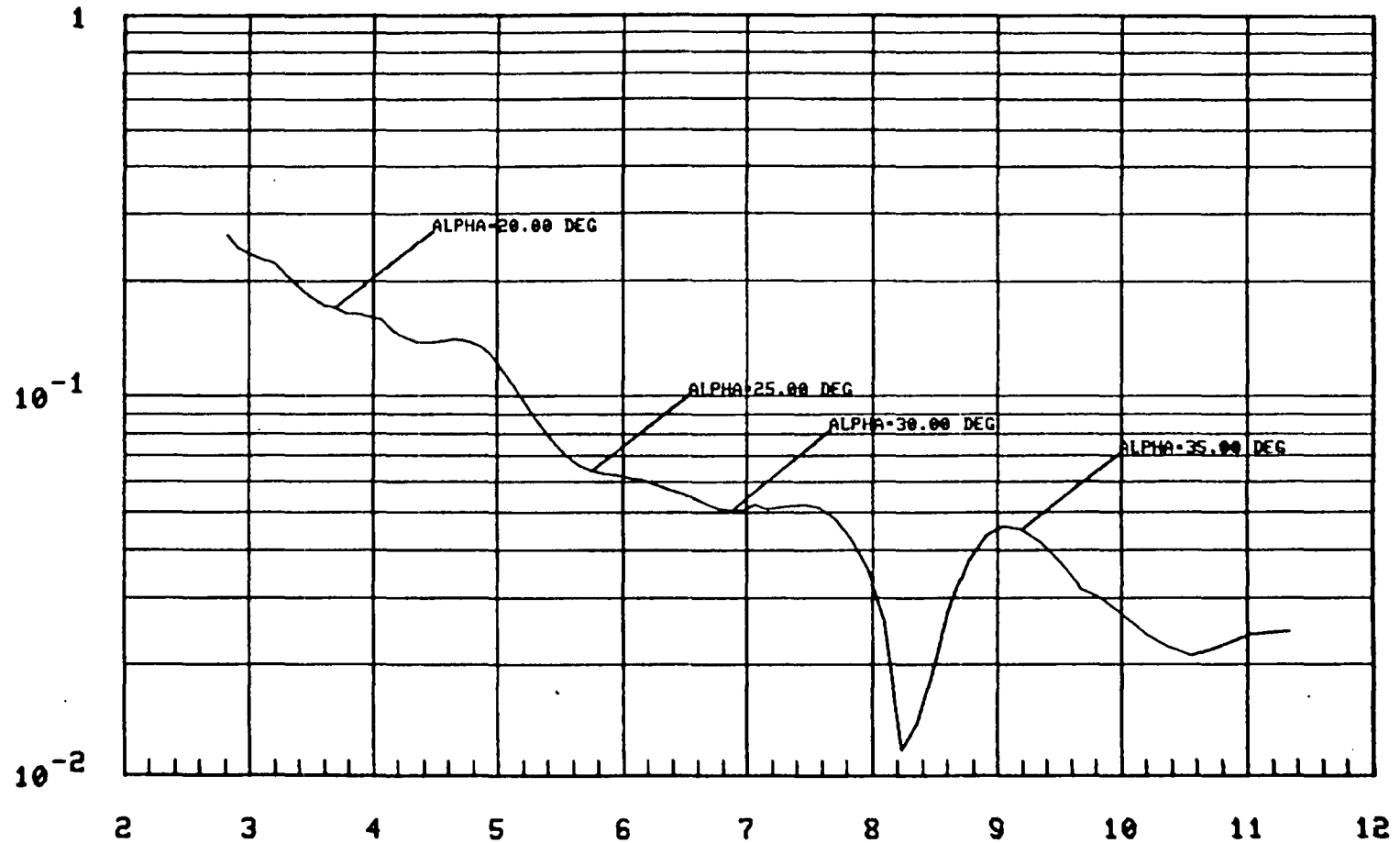


# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

U07T9901A/H-REF 1065-1500 SEC

FILE CODE - H/H-0000

B-181

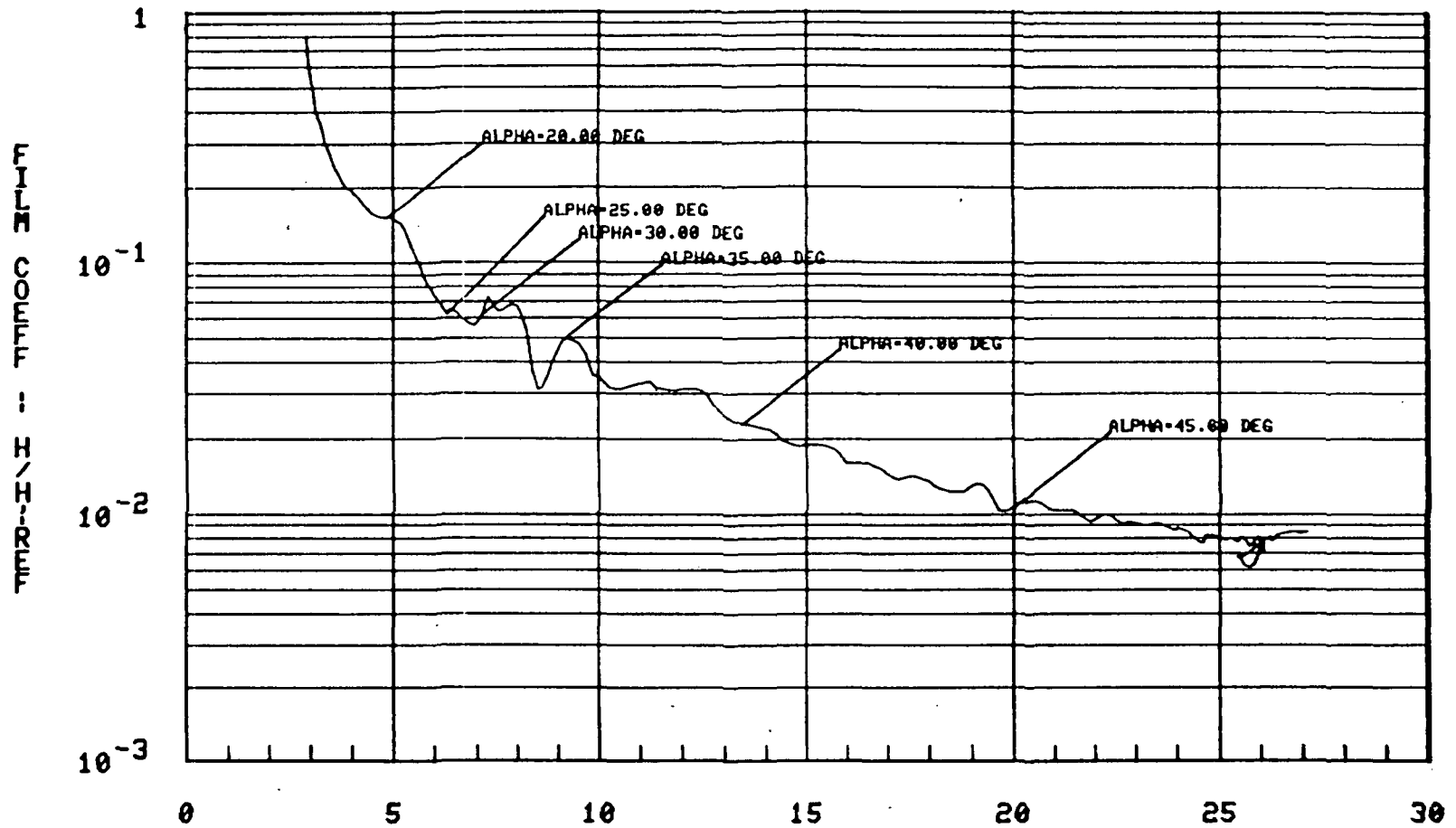


MACH NUMBER

01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

U07T9901A/H-REF 200-1530 SEC



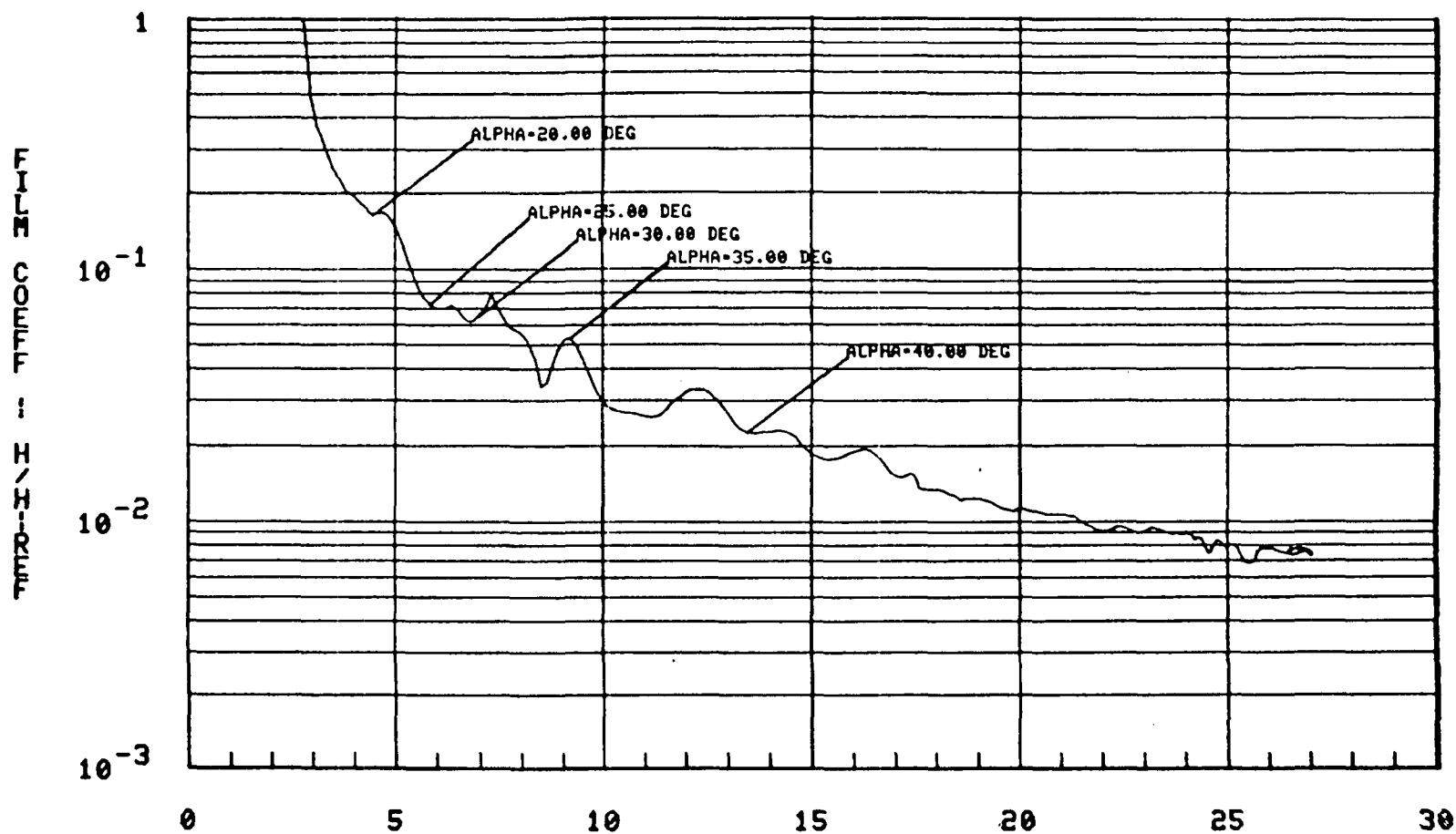
B-182

MACH NUMBER

01/11/84  
BASE TIME - 27550236.000 SEC.

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U07T9901A/H-REF 200-1440 SEC

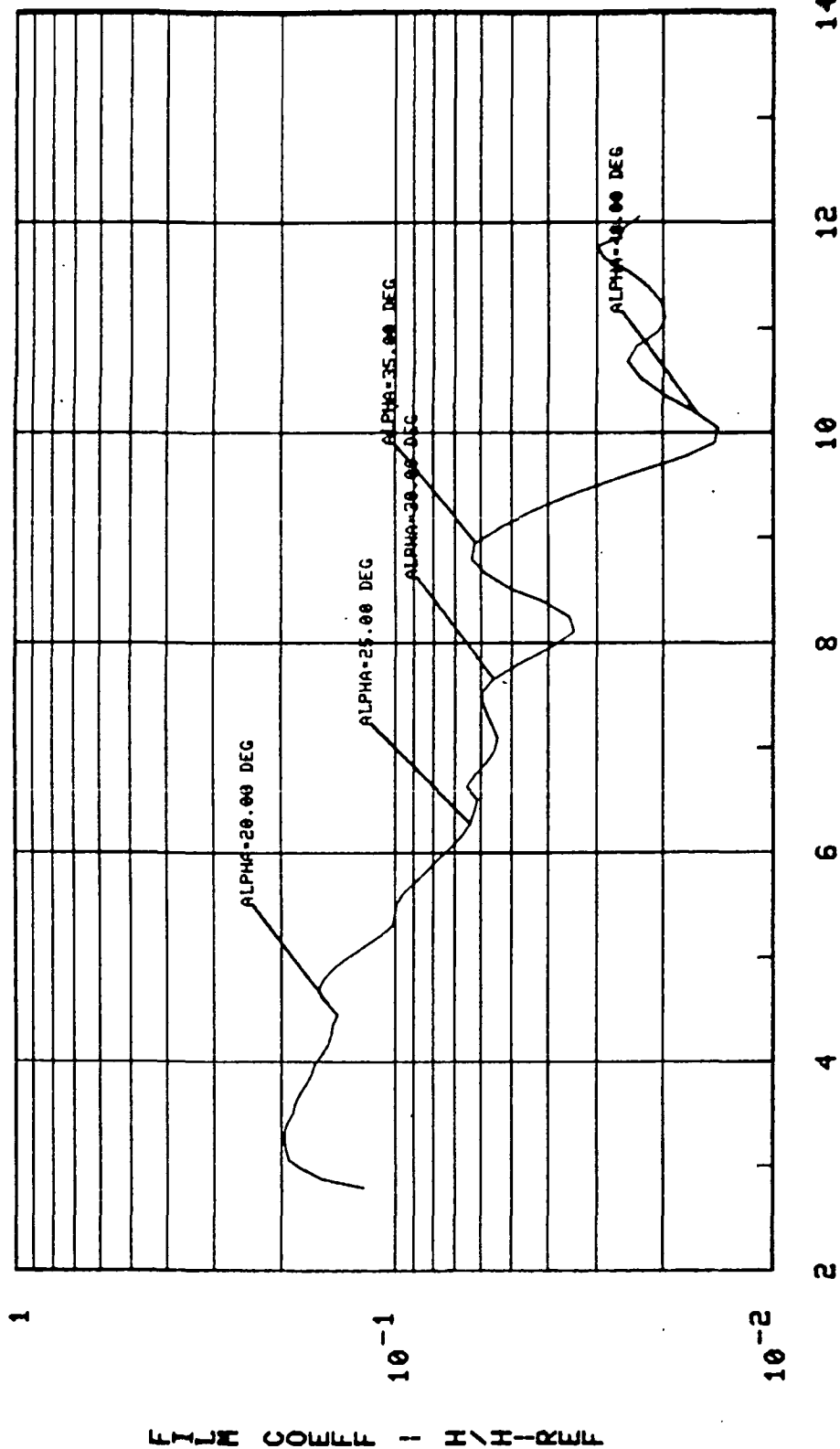


01/11/84  
BASE TIME = 07745684.000 SEC.



# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

U07T9901A/H-REF 965-1360 SEC

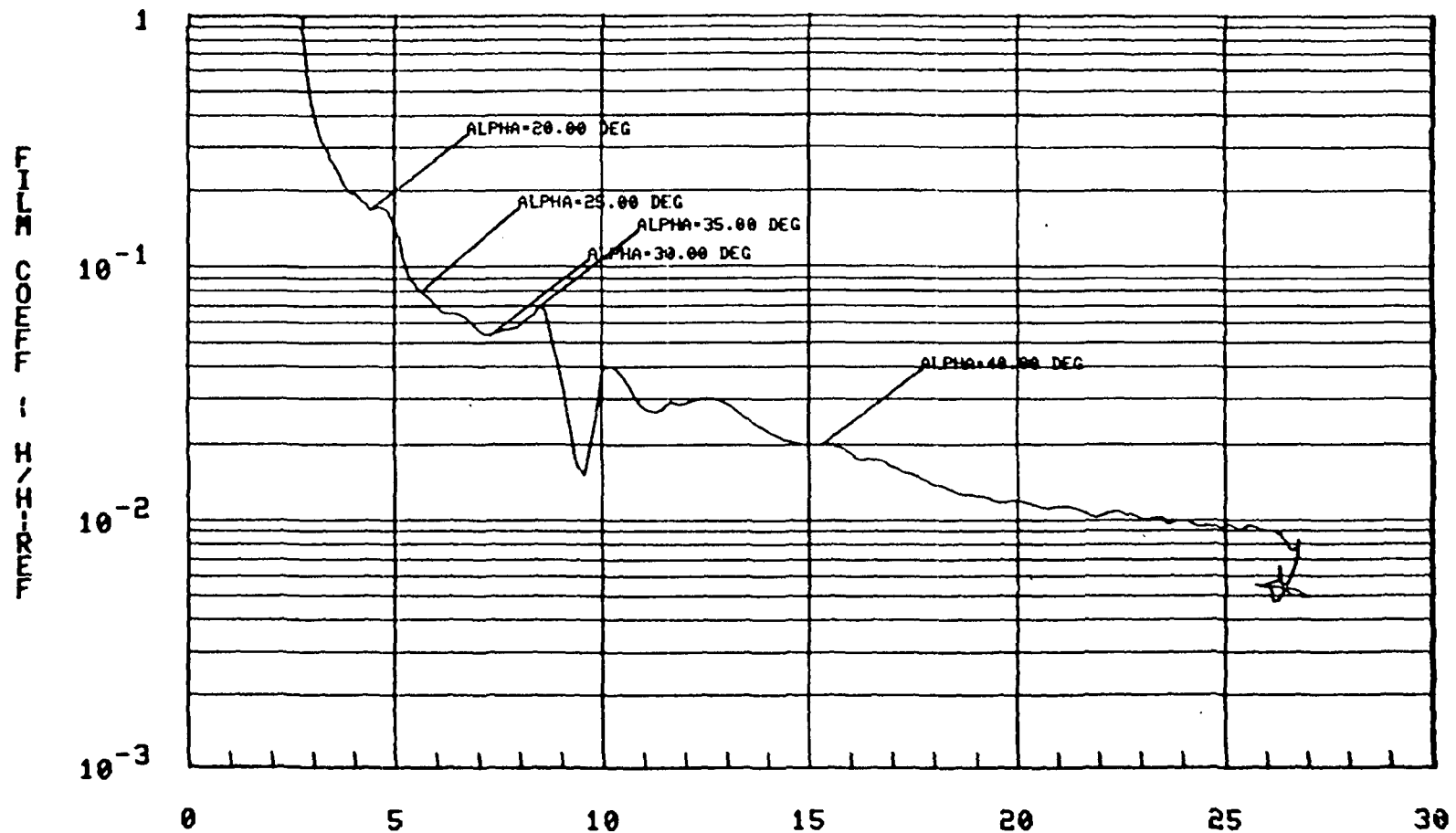


01/12/84  
BASE TIME - 1600423.000 SEC.

MACH NUMBER

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U07T9901A/H-REF 150-1430 SEC



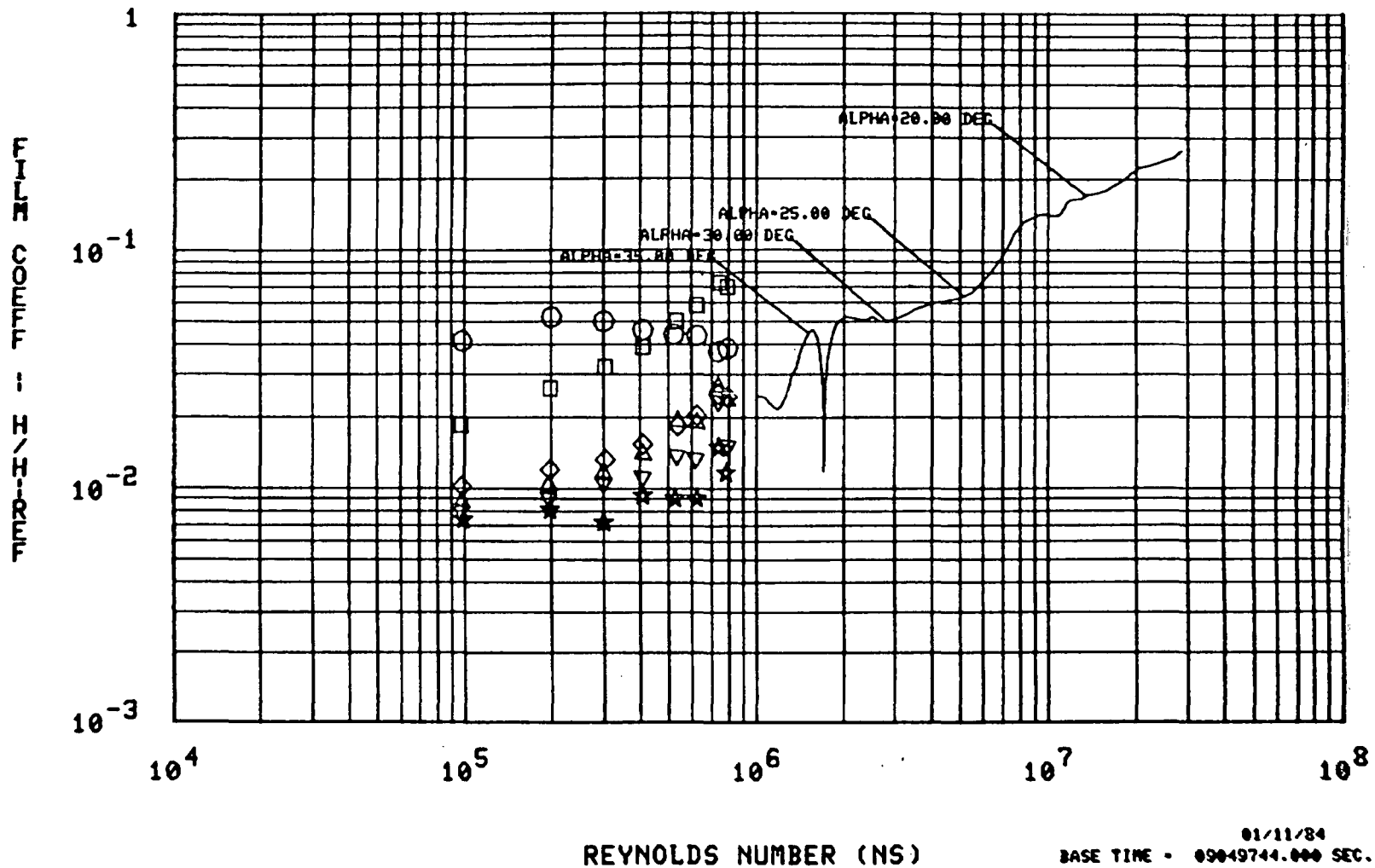
01/12/84  
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9901A/H-REF 1065-1500 SEC

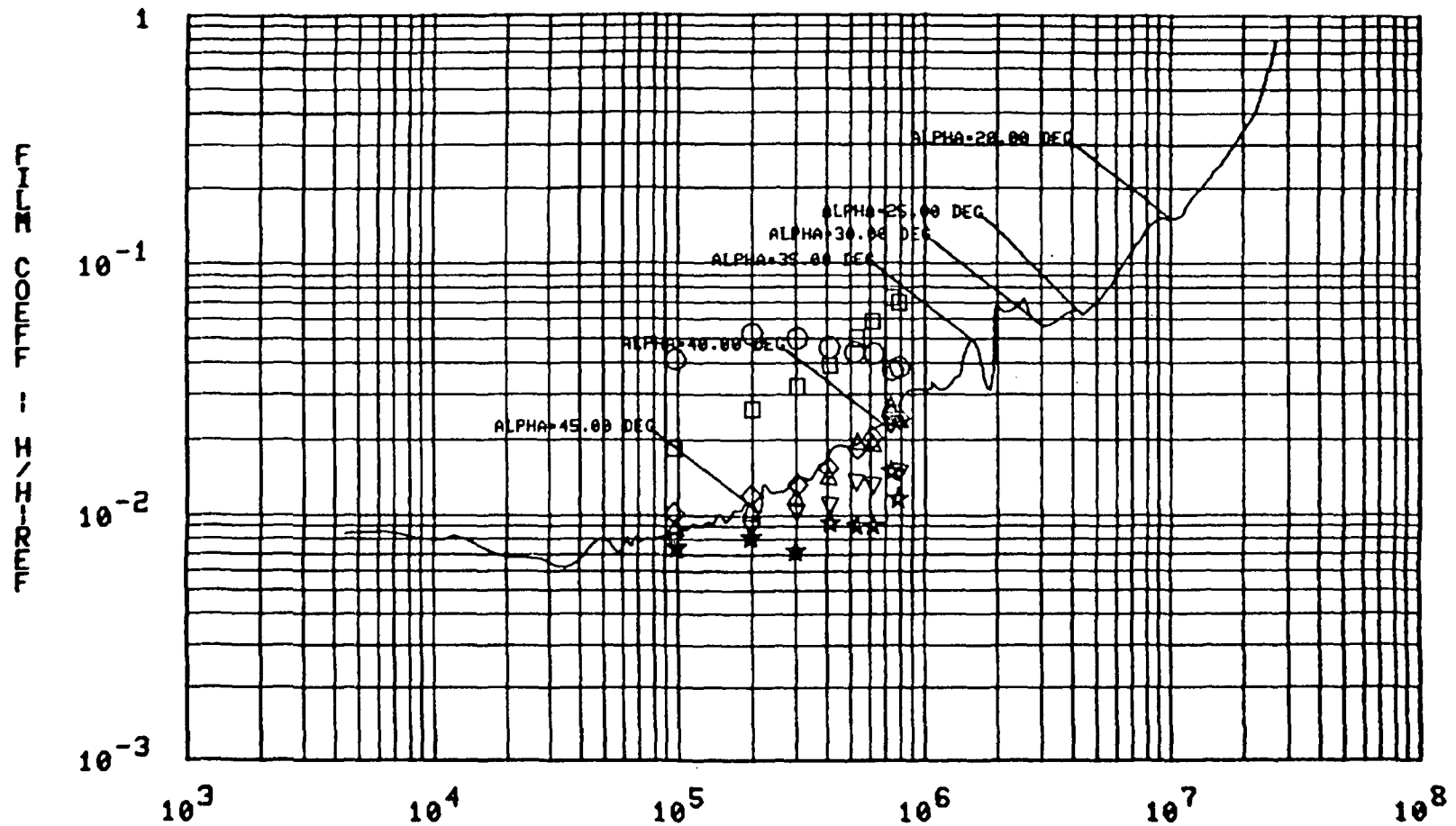


# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

○  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9901A/H-REF 200-1530 SEC



B-187

REYNOLDS NUMBER (NS)

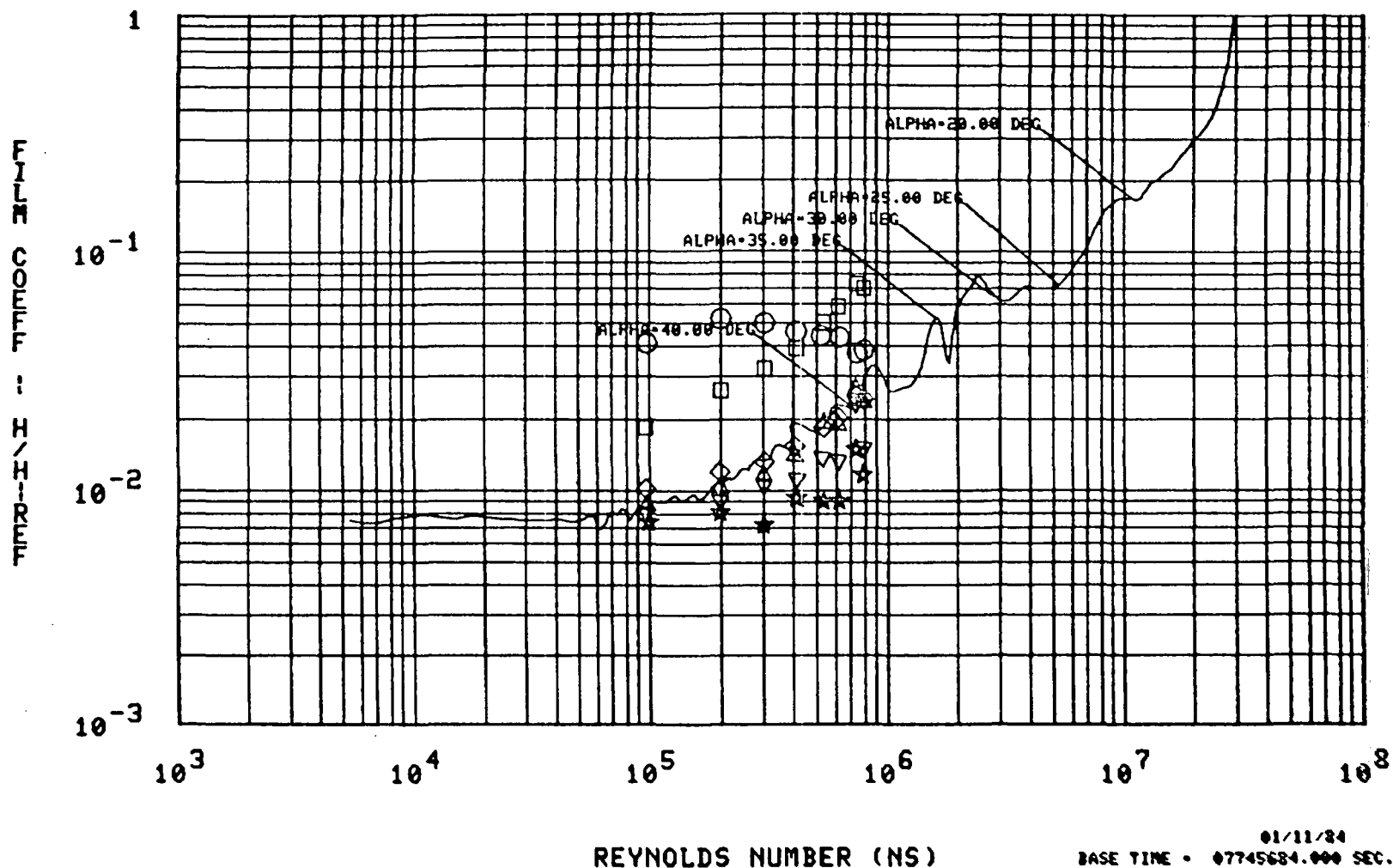
01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9901A/H-REF 200-1440 SEC



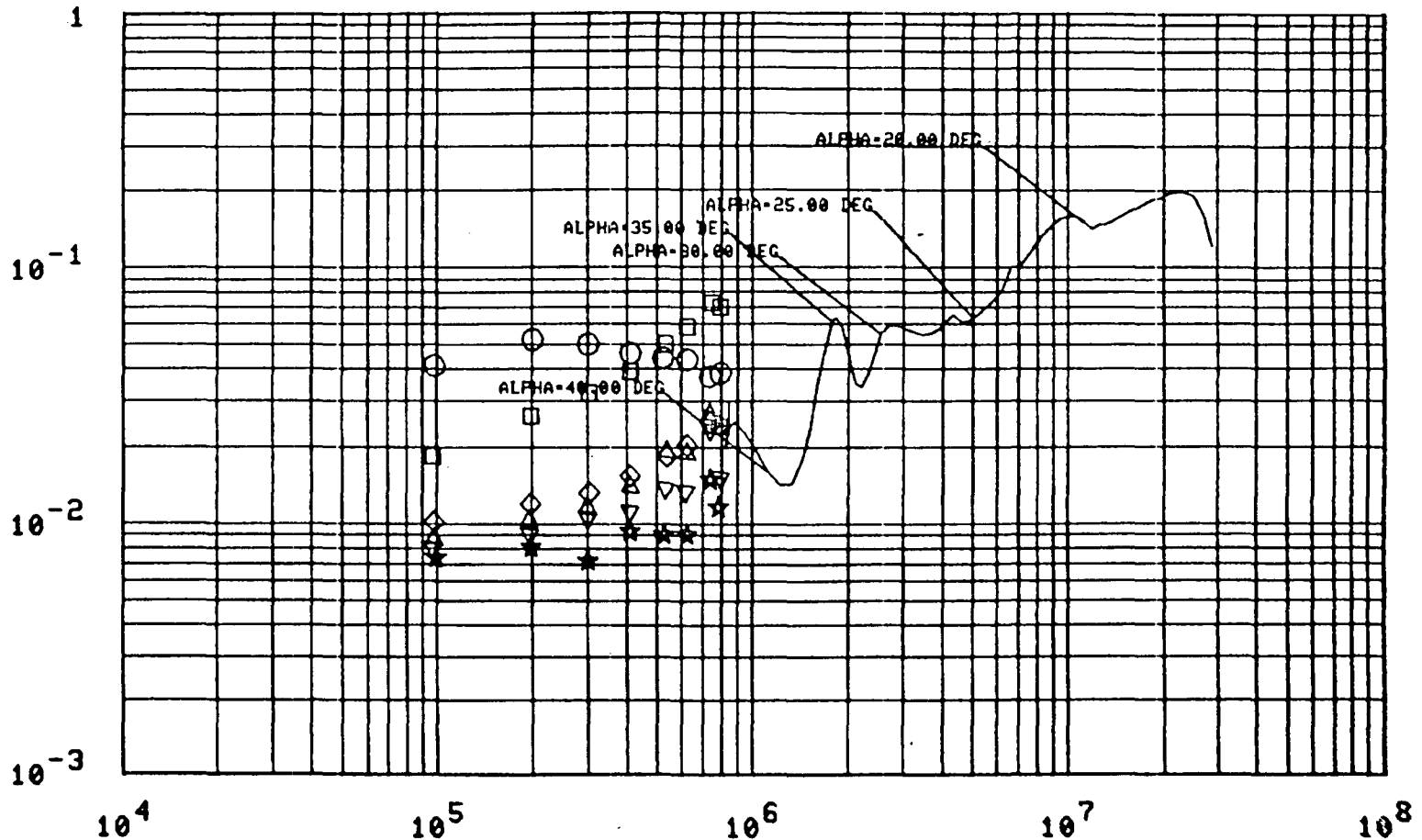
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9901A/H-REF 965-1360 SEC

TIME CORRECTION - I/I-CORR



REYNOLDS NUMBER (NS)

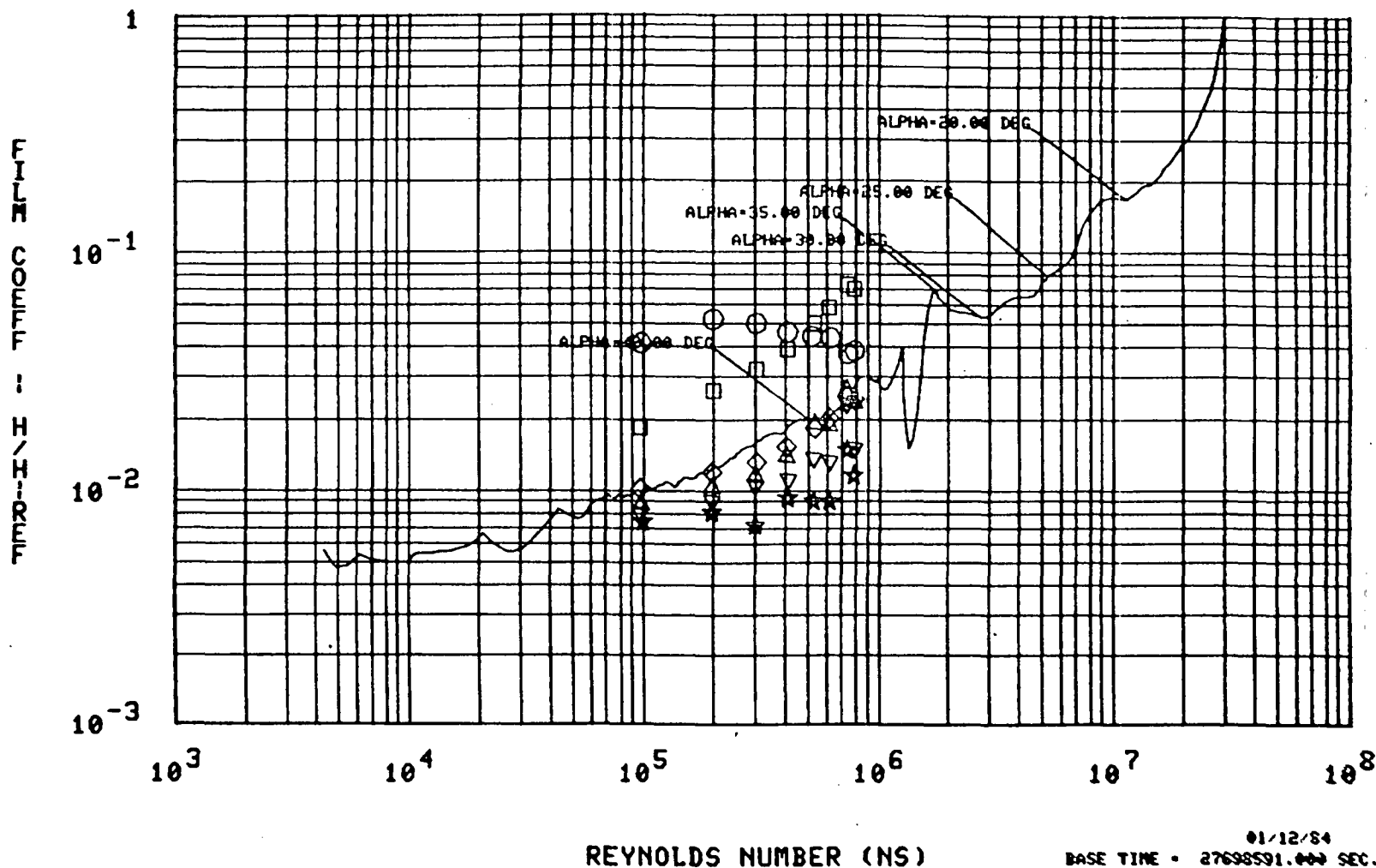
01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.50$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

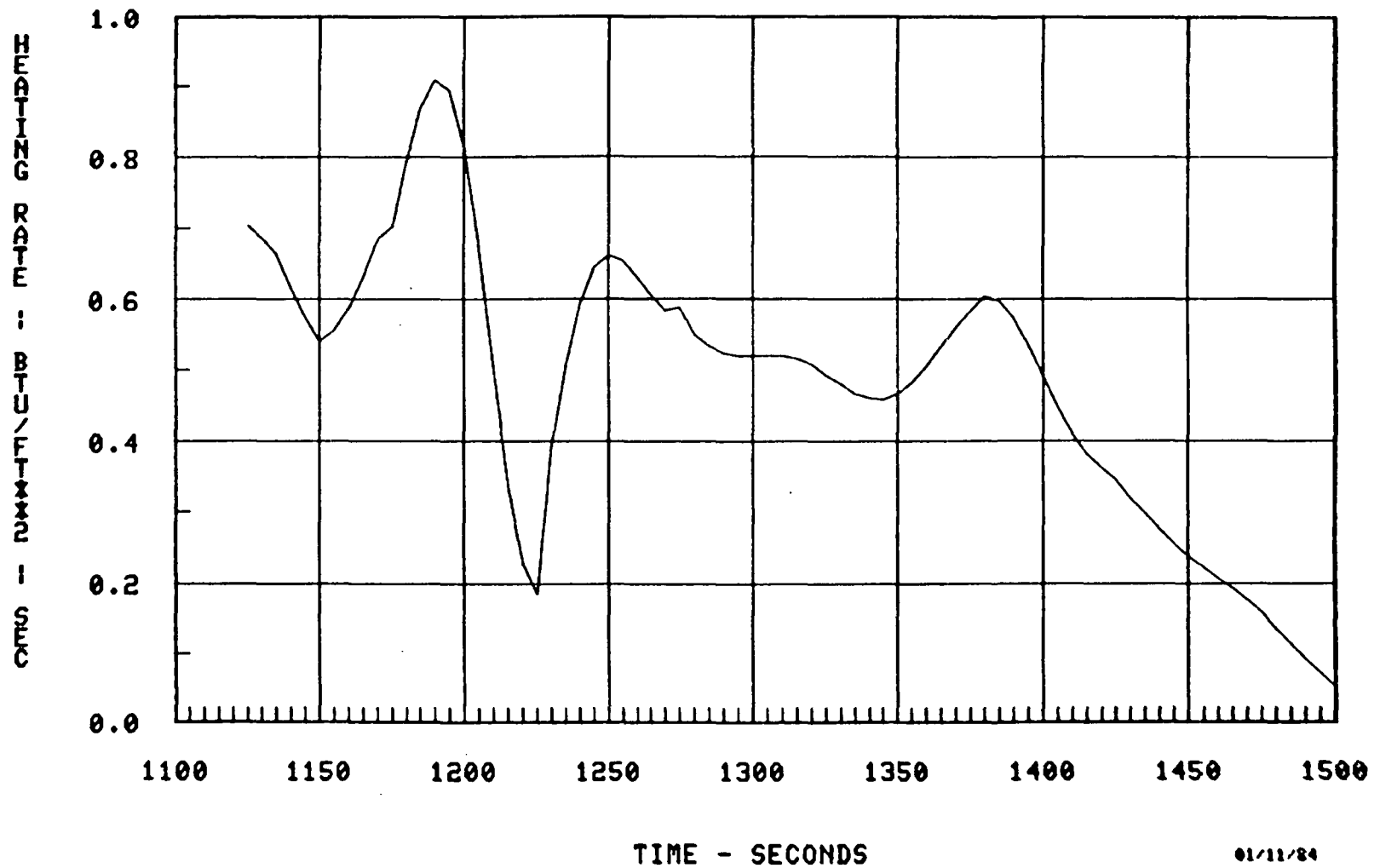
OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9901A/H-REF 150-1430 SEC



STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U07T9901A



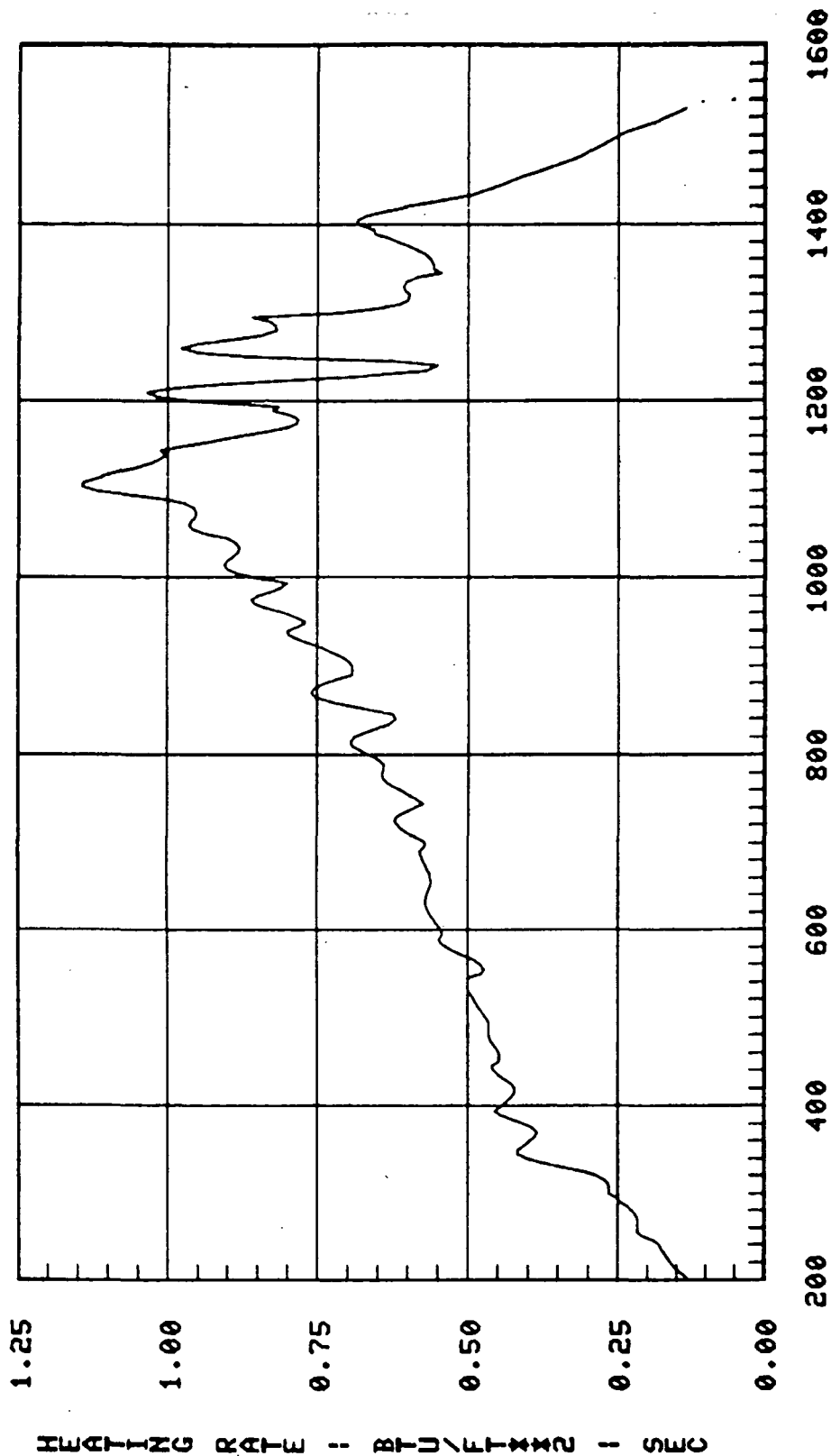
01/11/84

B-191



# STS-2 (107 FT LENGTH SIDE FUS X/L=0.50) Z=400

U07T9901A

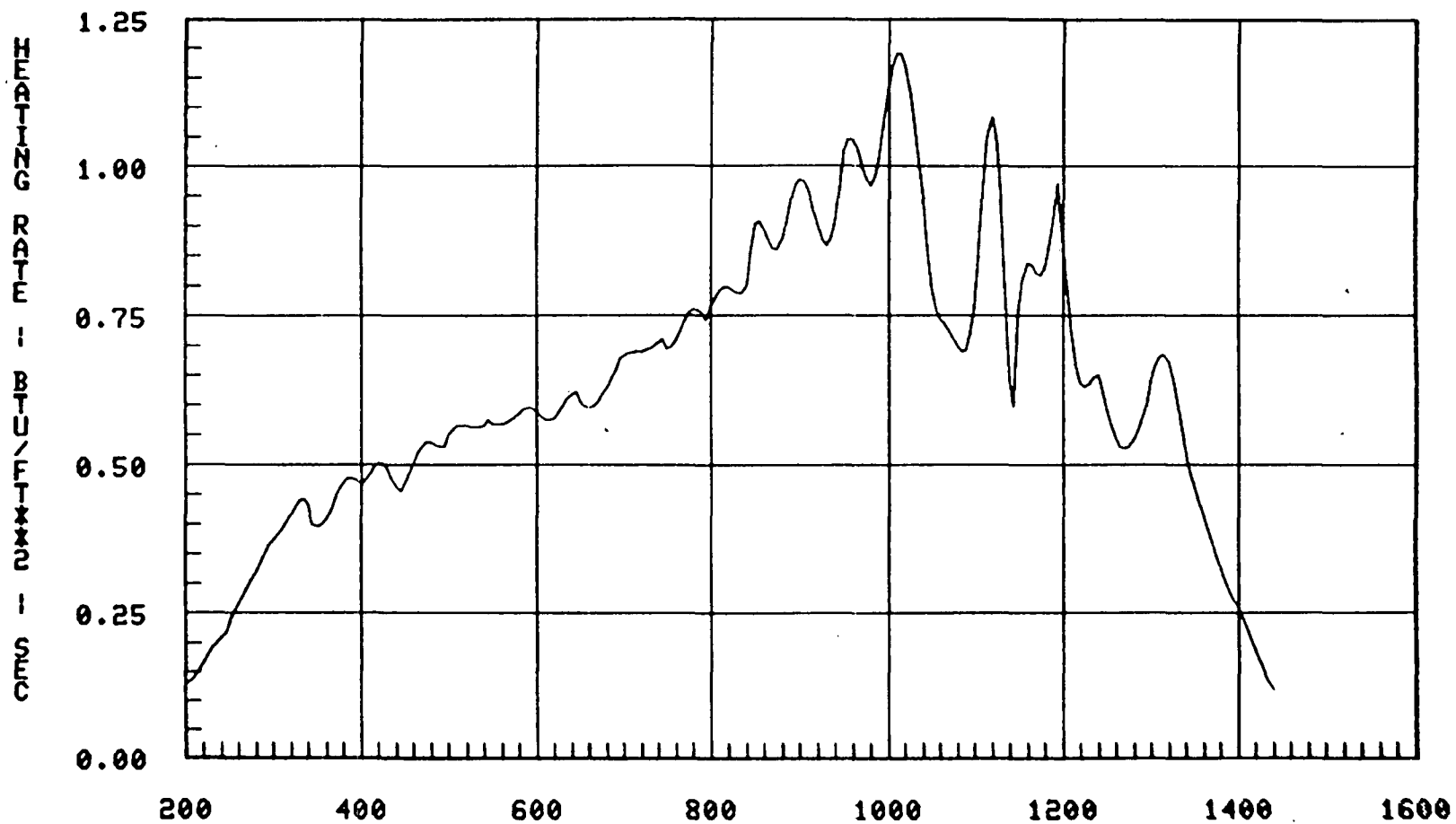


TIME - SECONDS

01/11/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U07T9901A

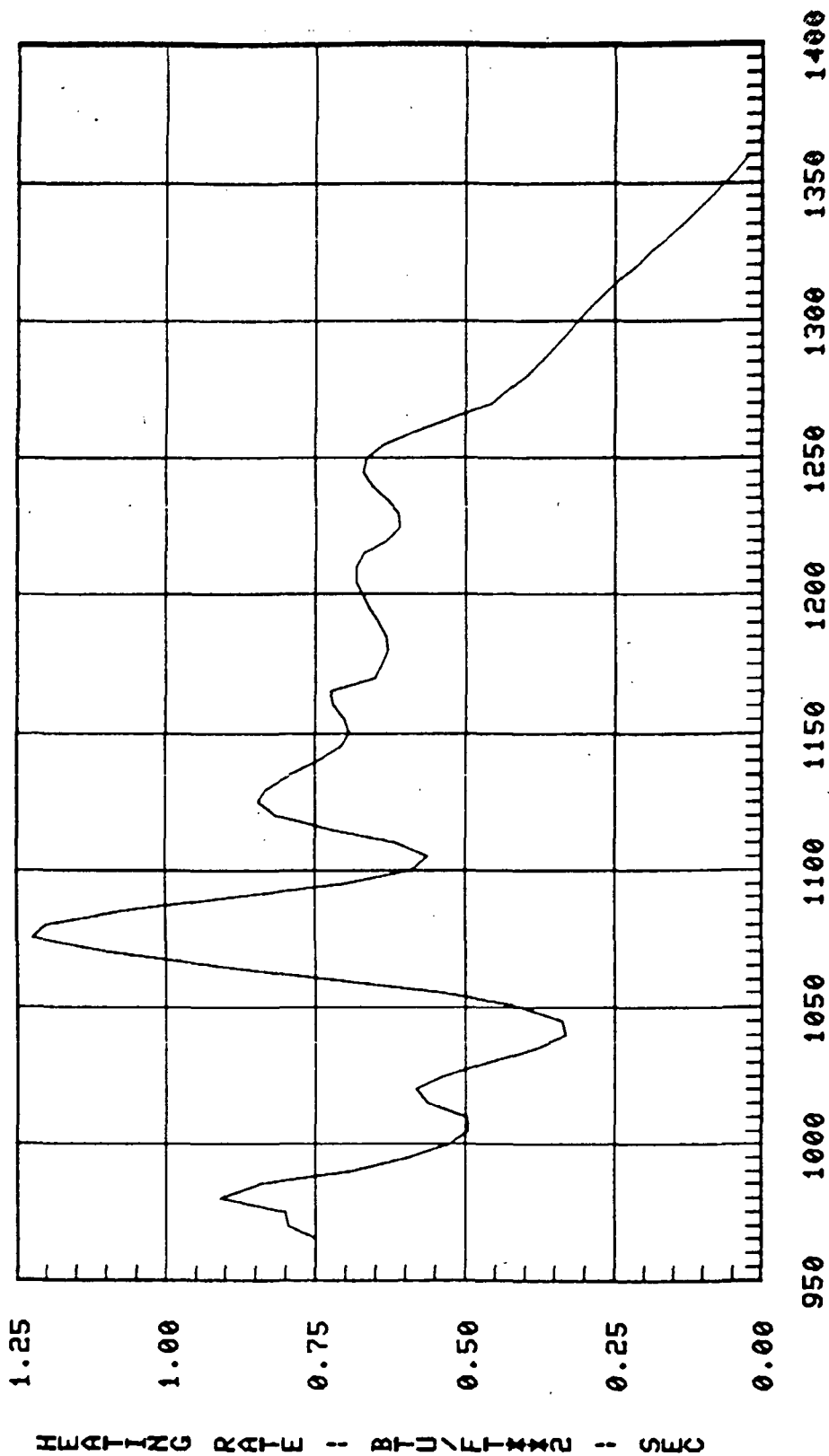


B-193

01/11/84

STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U07T9901A

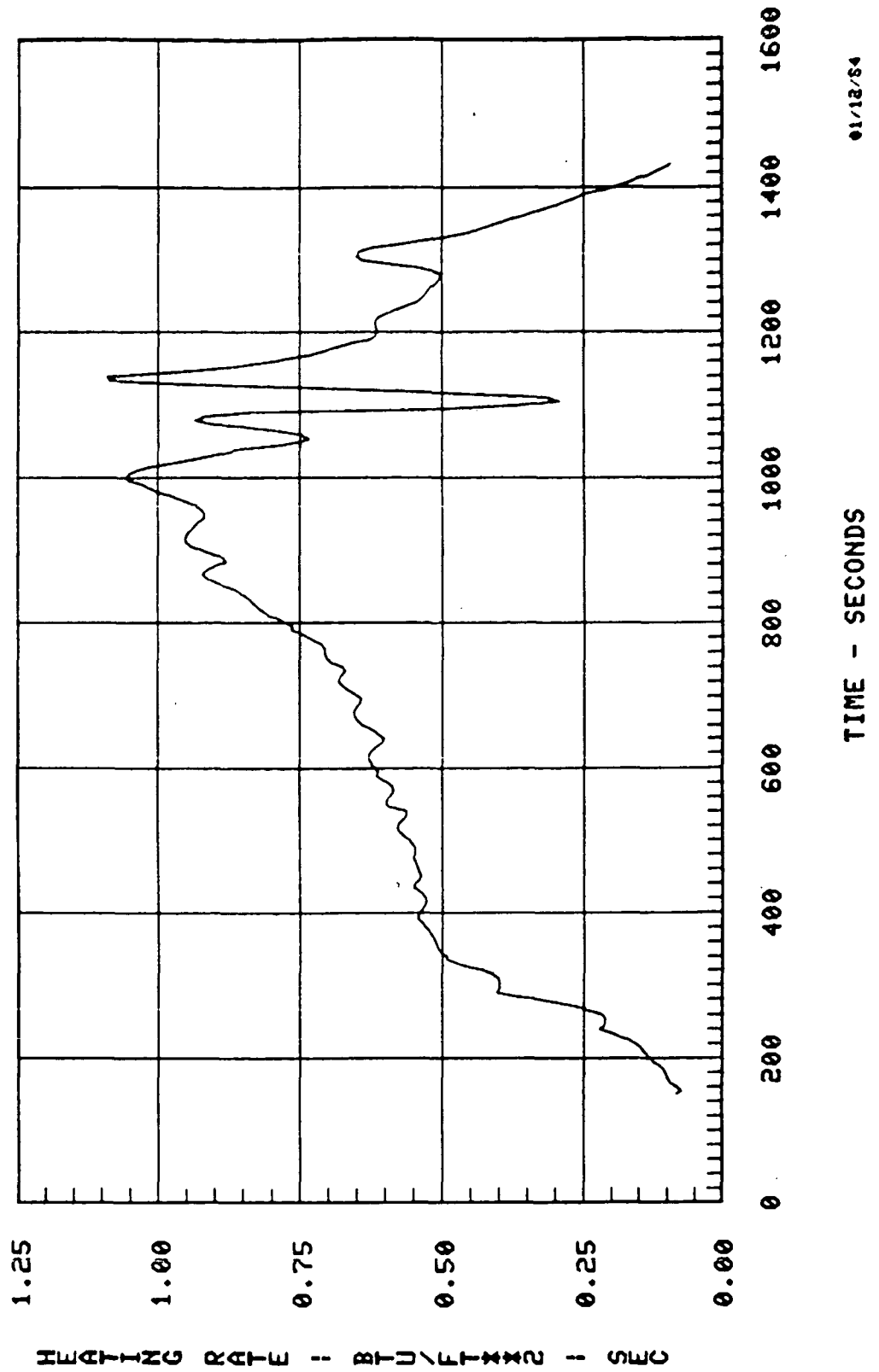


TIME - SECONDS

01/12/84

STS-5 (107 FT LENGTH SIDE FUS X/L=0.50) Z=400

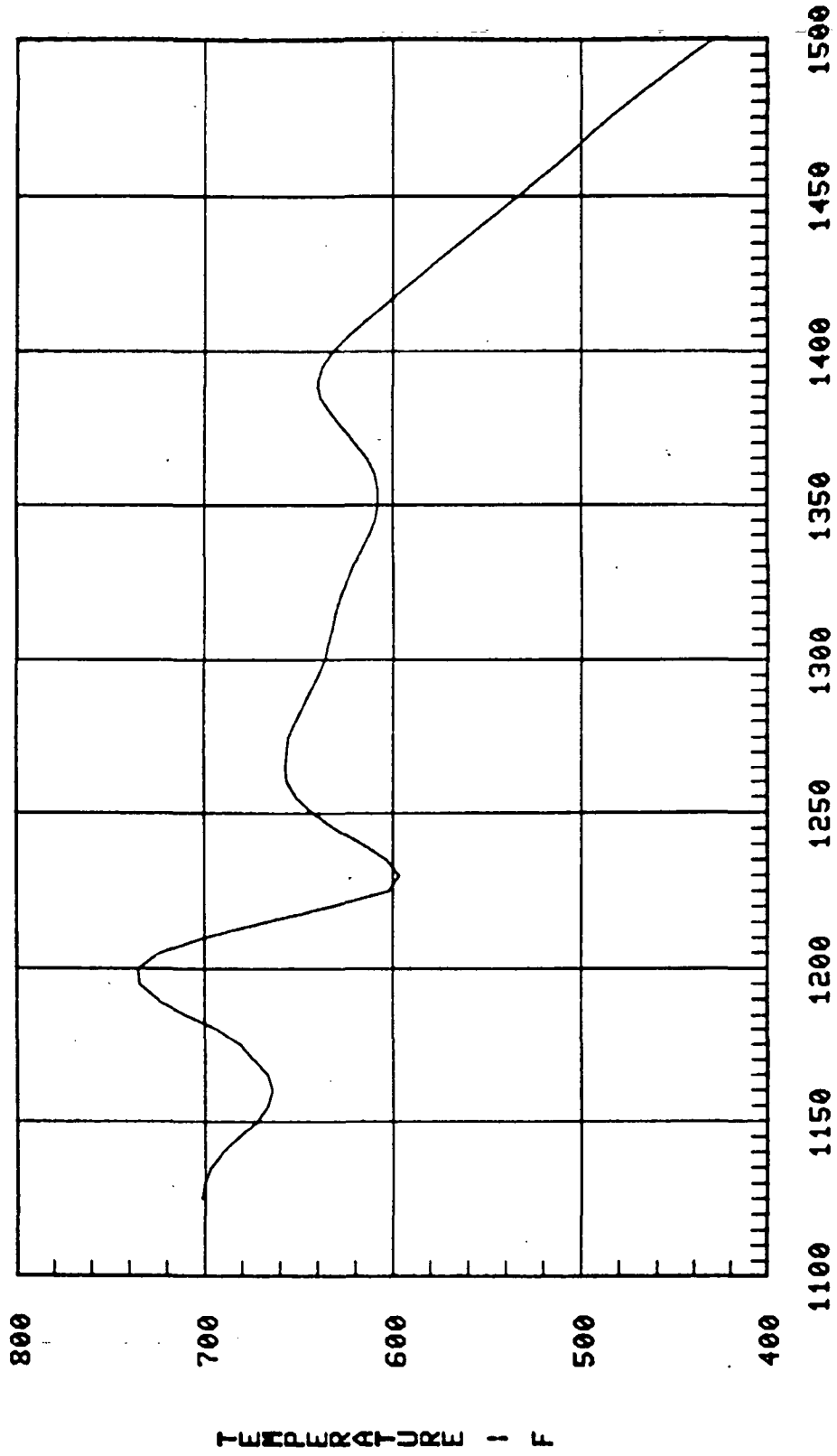
U07T9901A



01/12/84

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U07T9901A

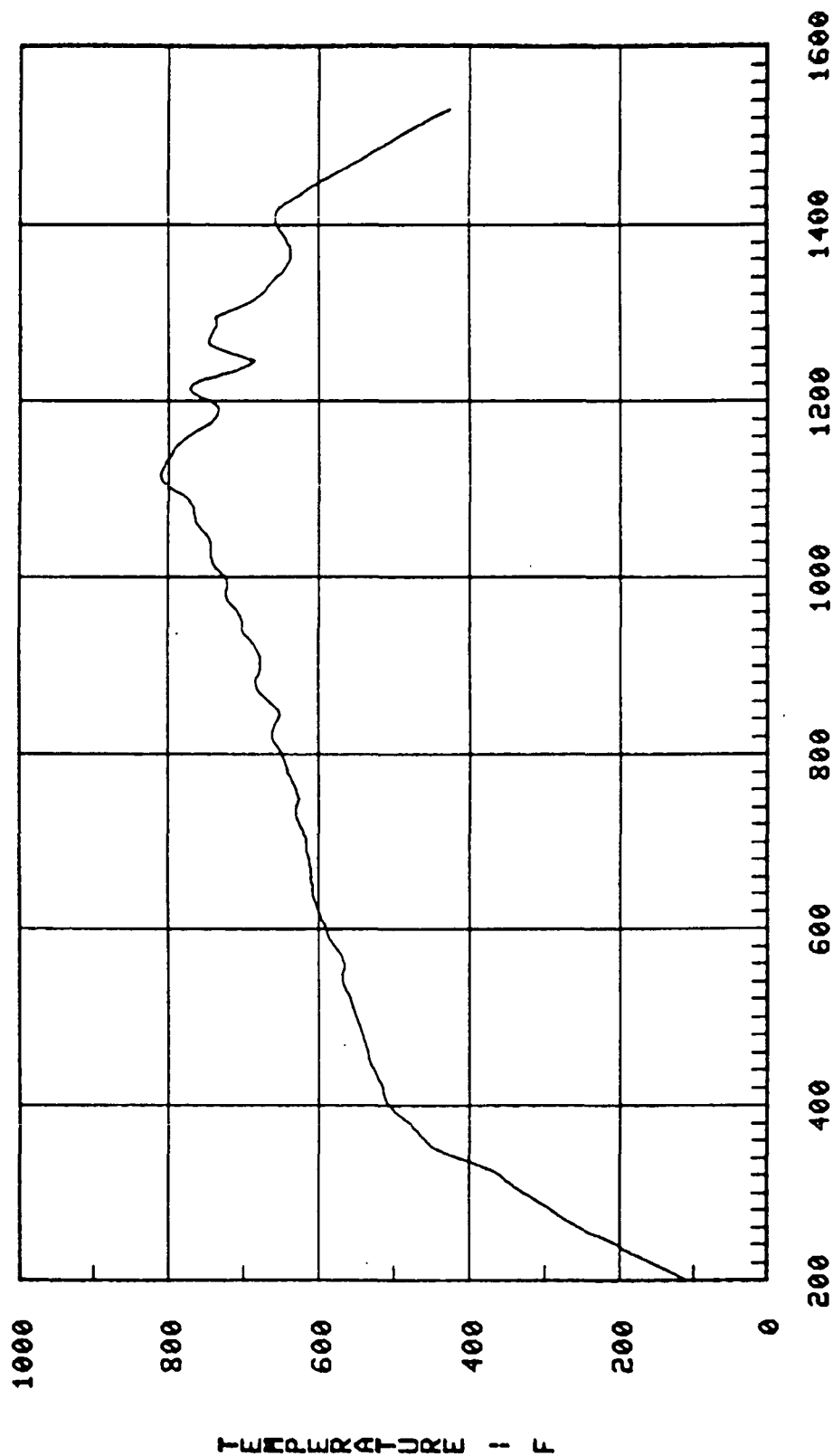


TIME - SECONDS

01/11/84

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U077901A

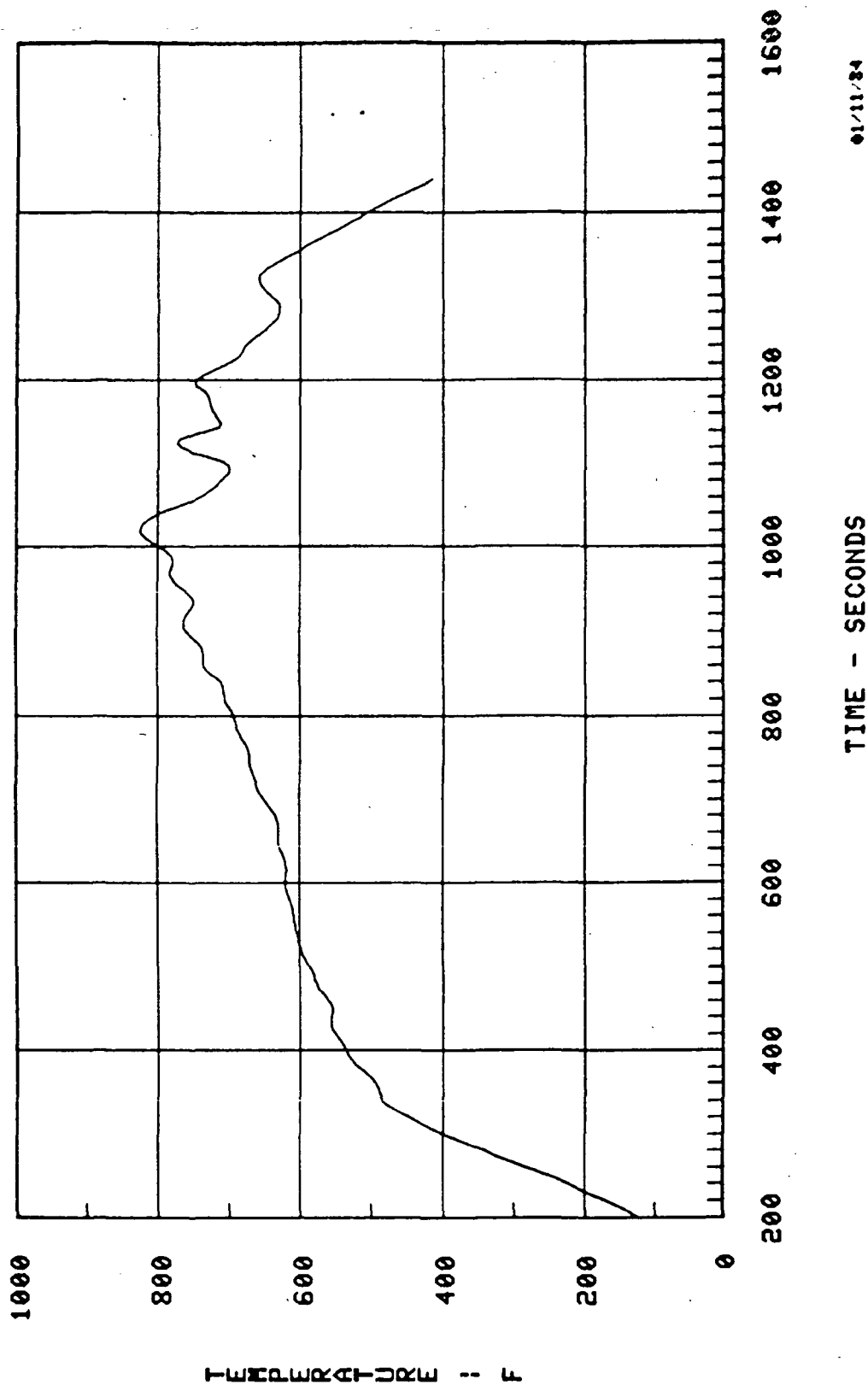


TIME - SECONDS

01/11/84

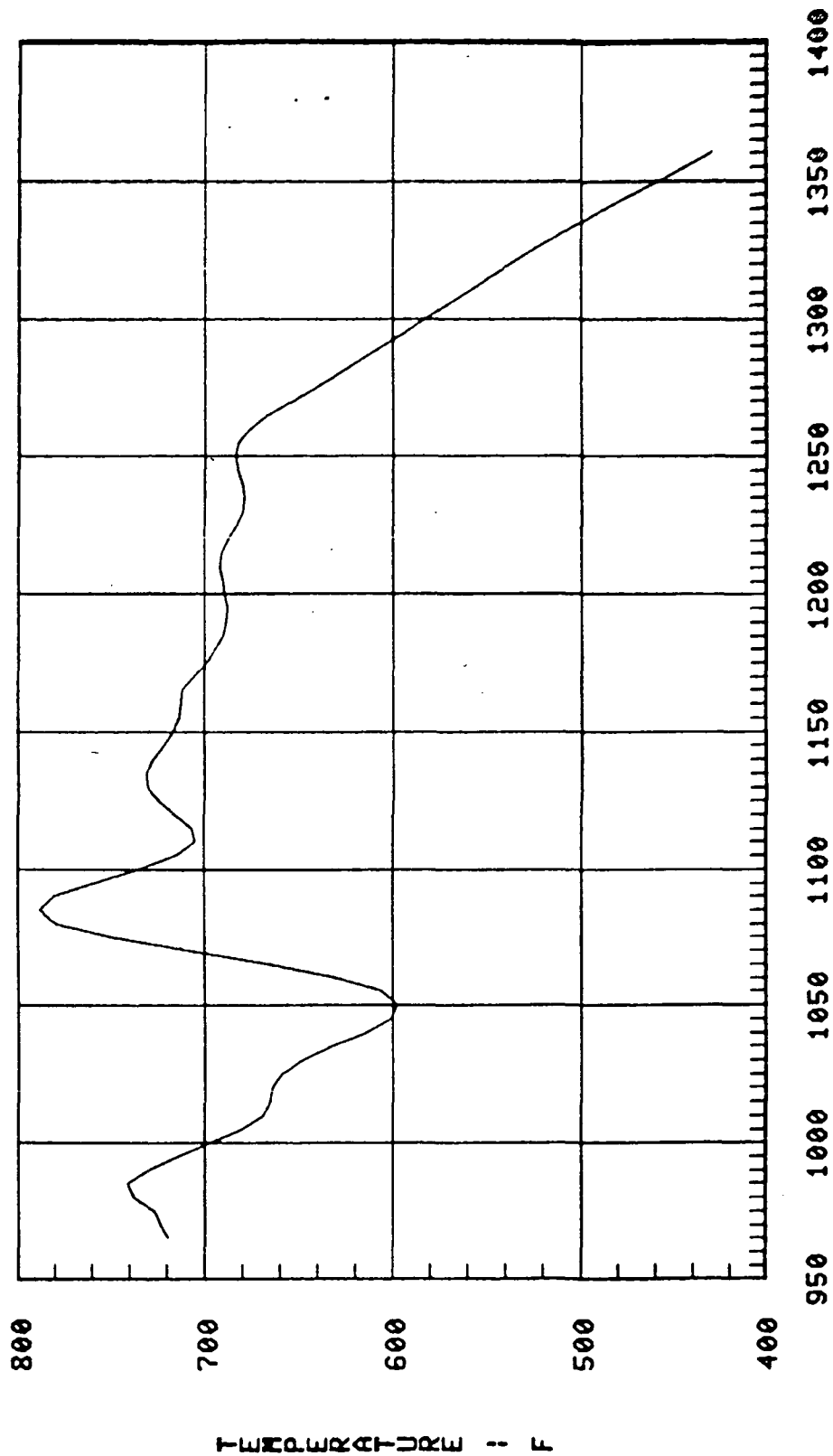
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U0779901A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U07T9001A

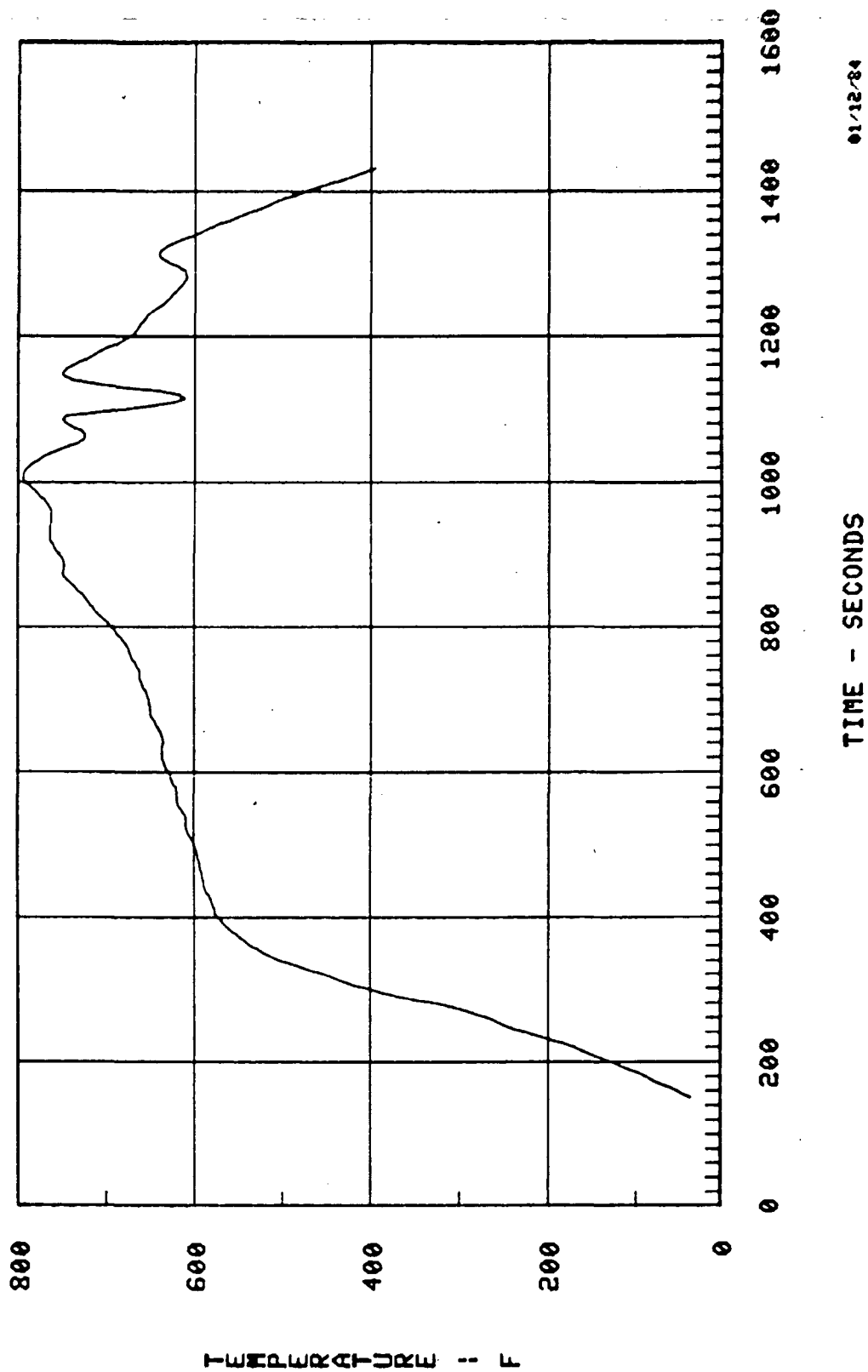


01/18/84



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.50$ )  $Z=400$

U87T9901A

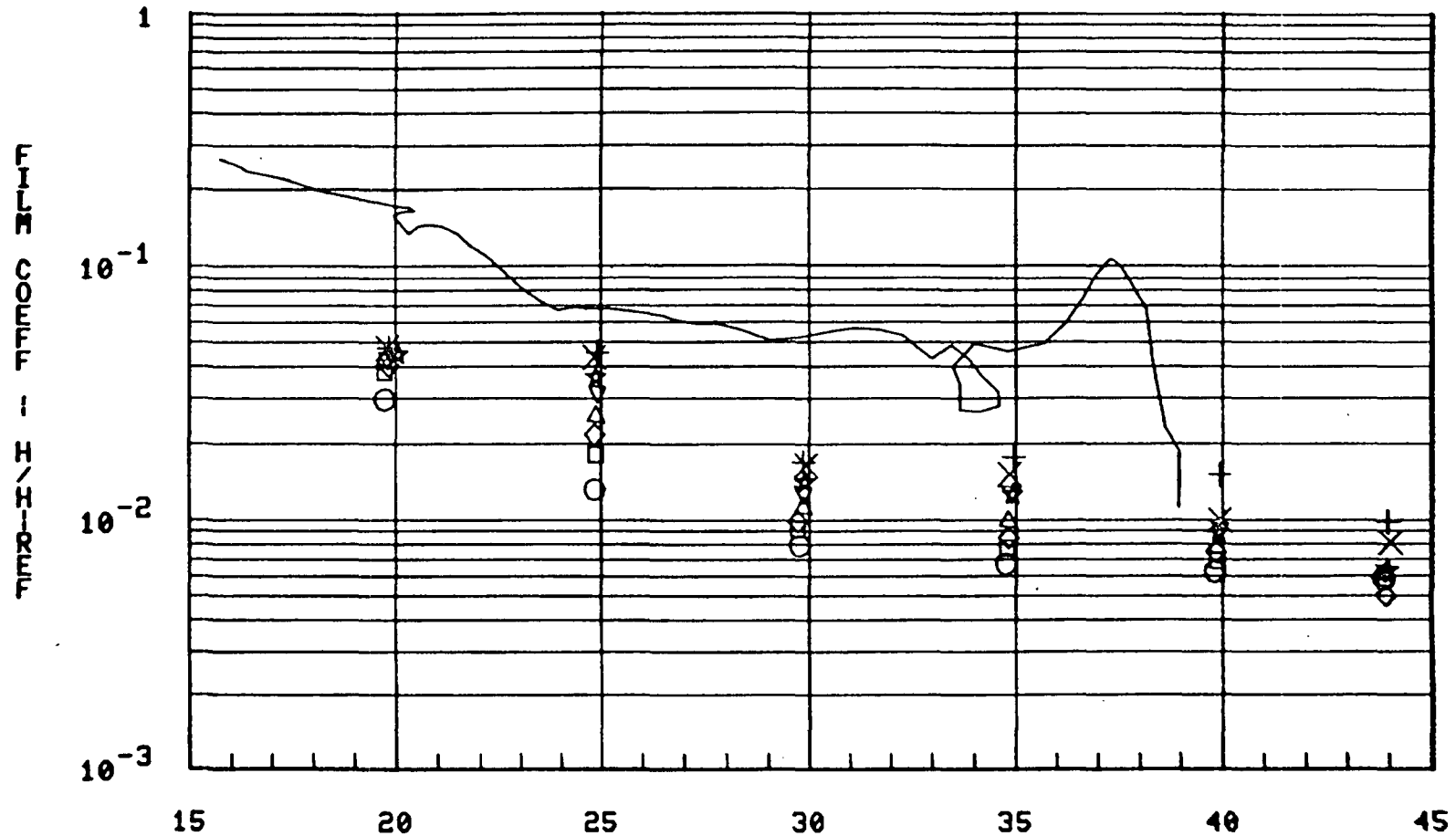


# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
□  
◇  
△  
▽  
★  
+  
×X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9905A/H-REF 1065-1500 SEC



ANGLE-OF-ATTACK - DEG

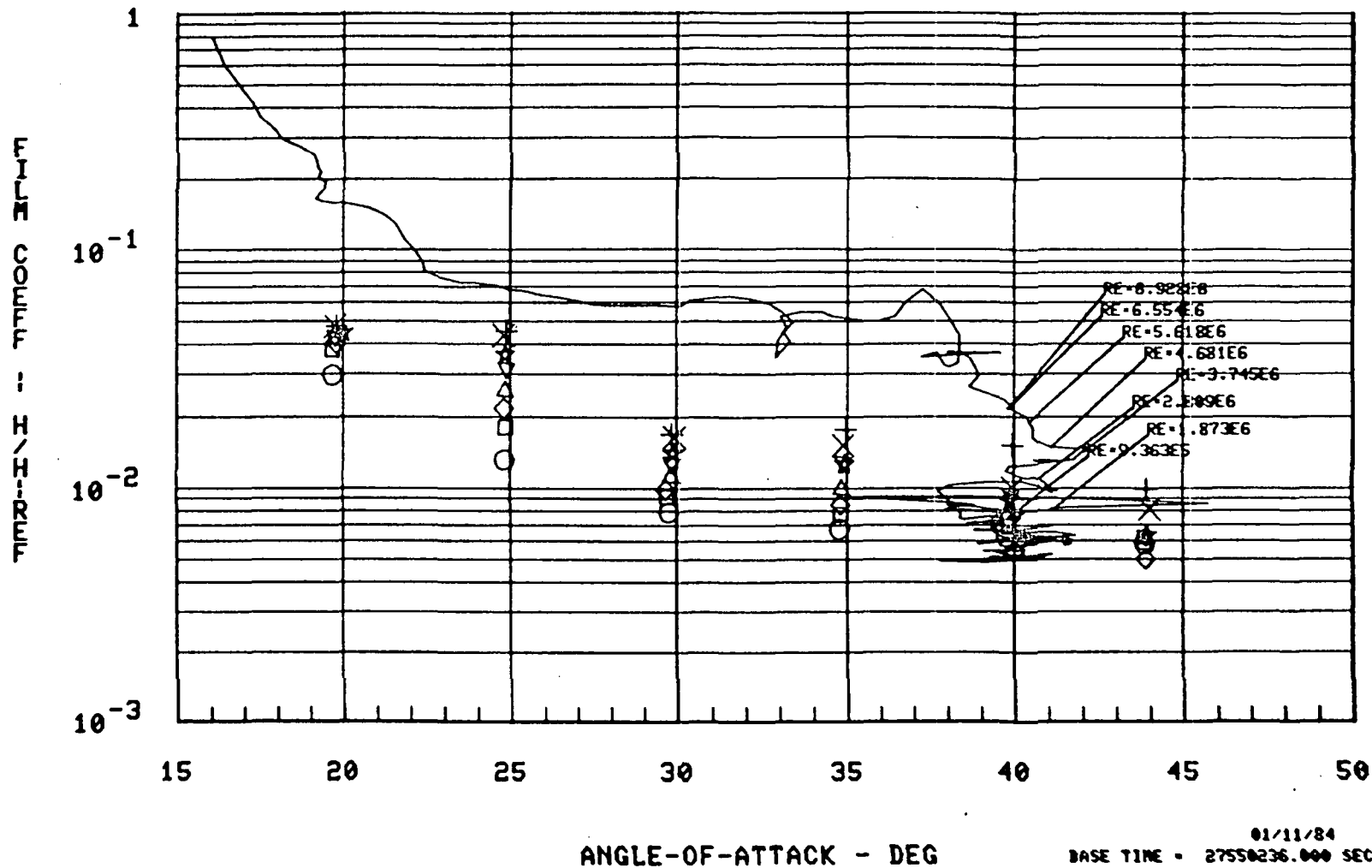
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

U07T9905A/H-REF 200-1530 SEC

O  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

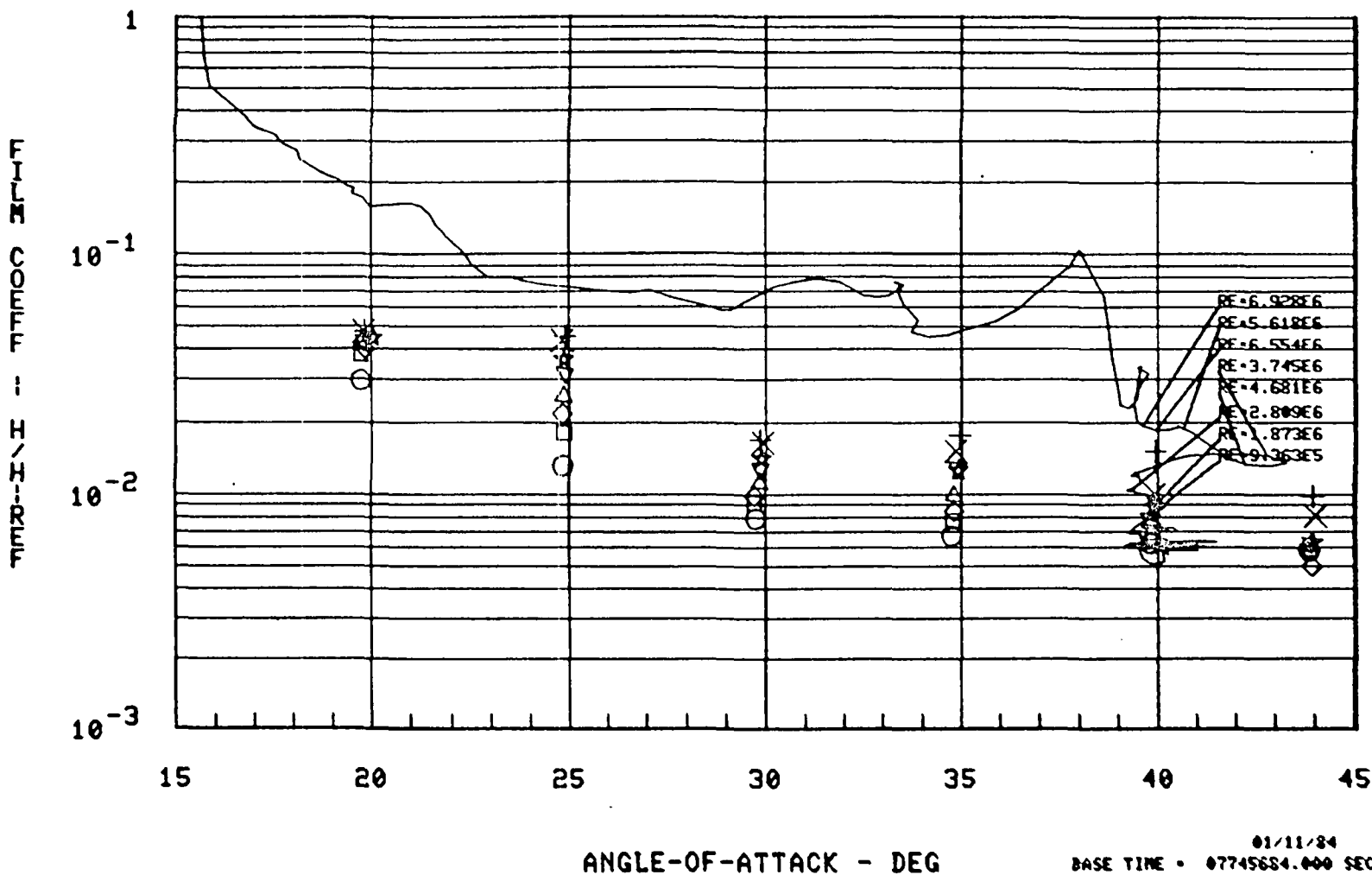


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U07T9905A/H-REF 200-1440 SEC

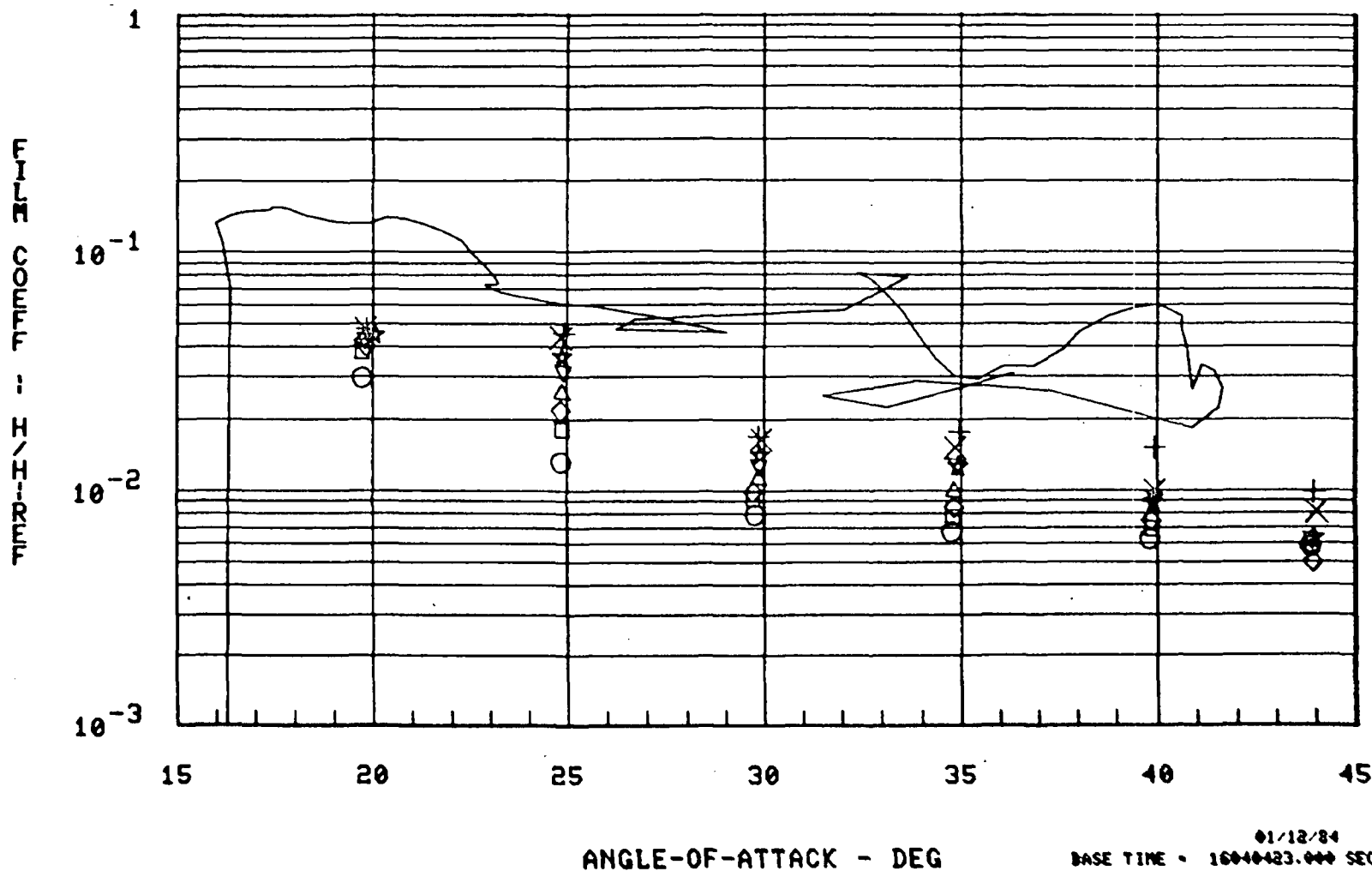


# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9905A/H-REF 965-1360 SEC



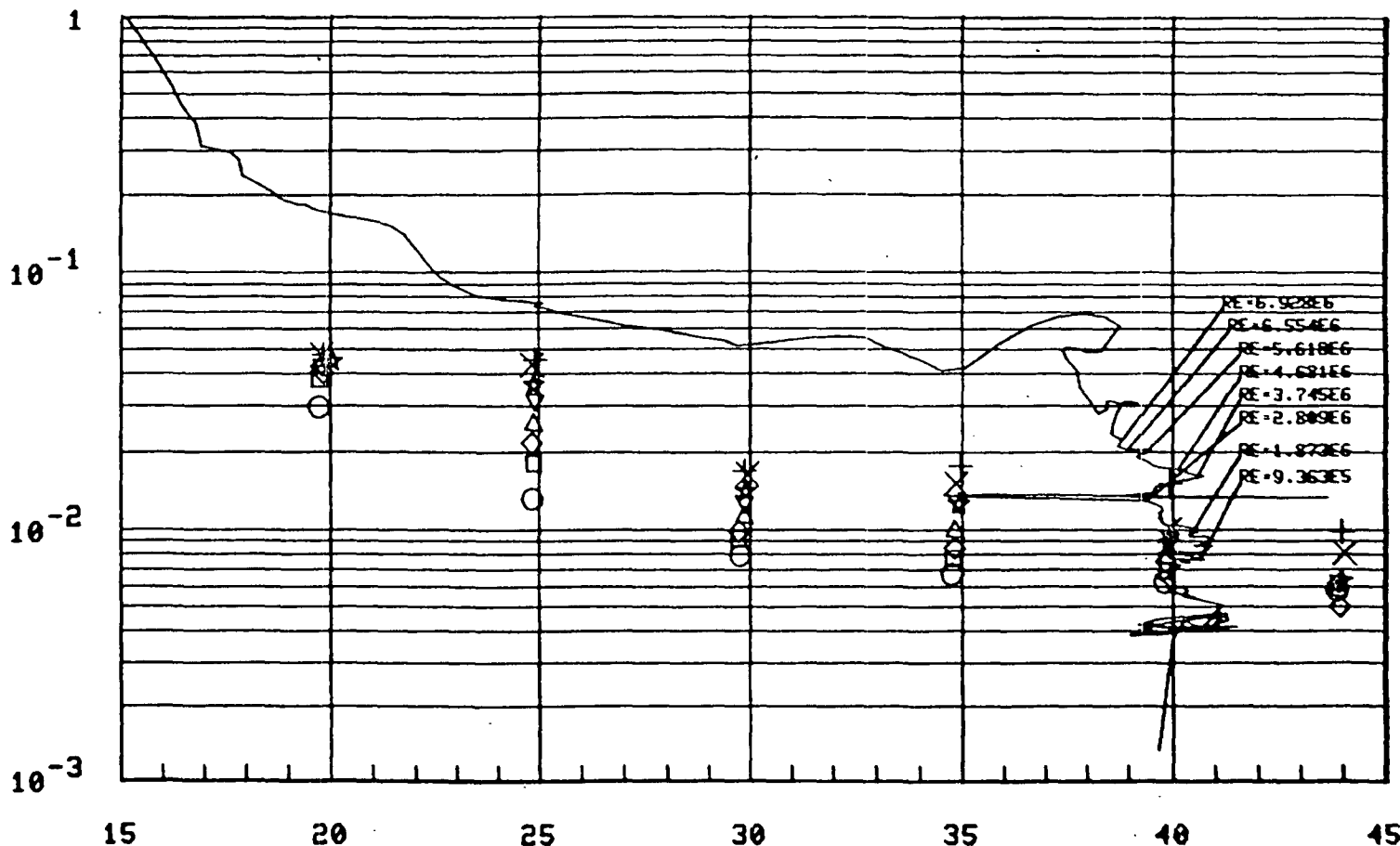
# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

O  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9905A/H-REF 150-1430 SEC

LIFT COEFF - I/I-REF

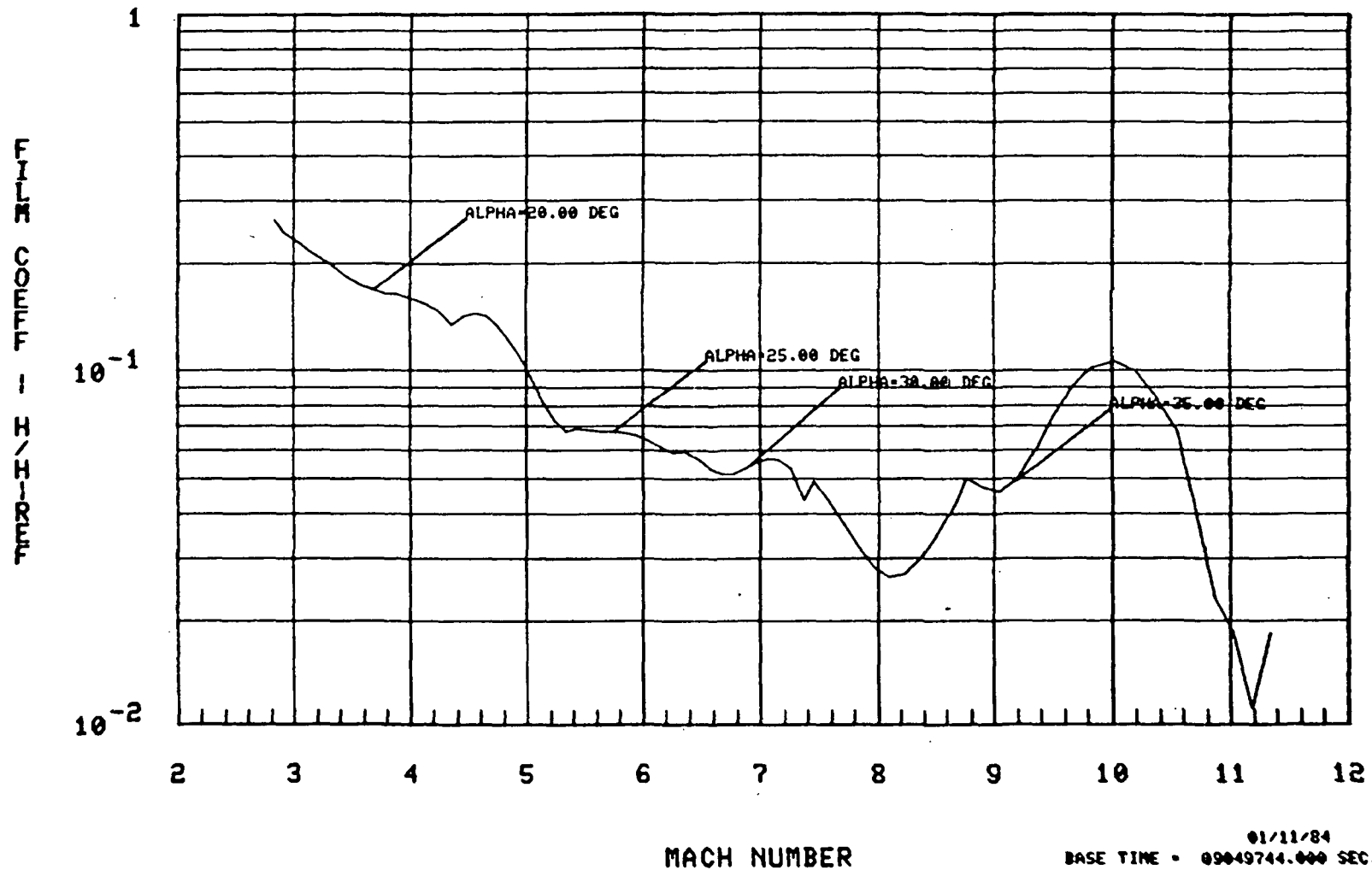


ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.

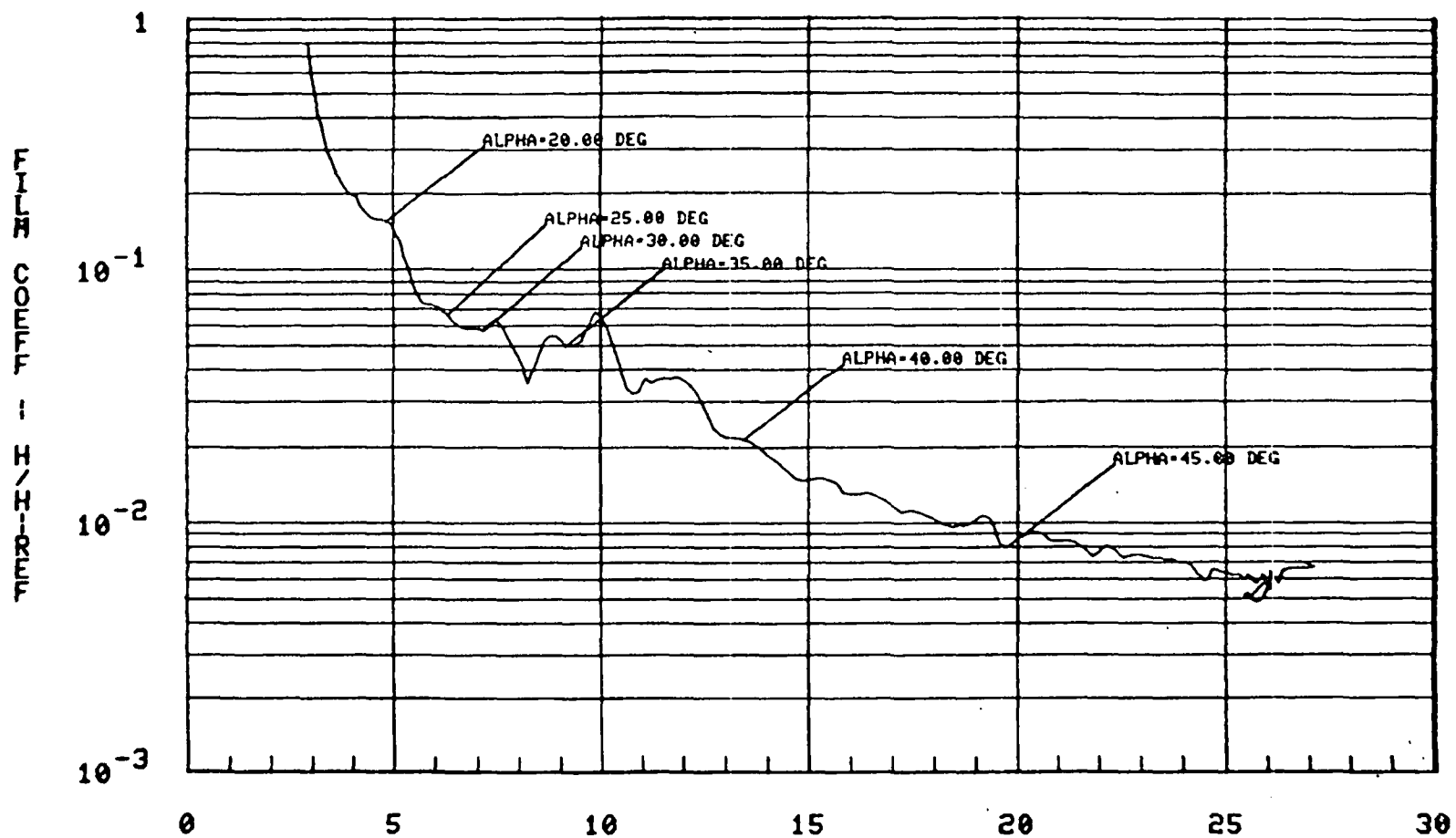
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

U07T9905A/H-REF 1065-1500 SEC



STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.55$ )  $Z=400$

U07T9905A/H-REF 200-1530 SEC



B-207

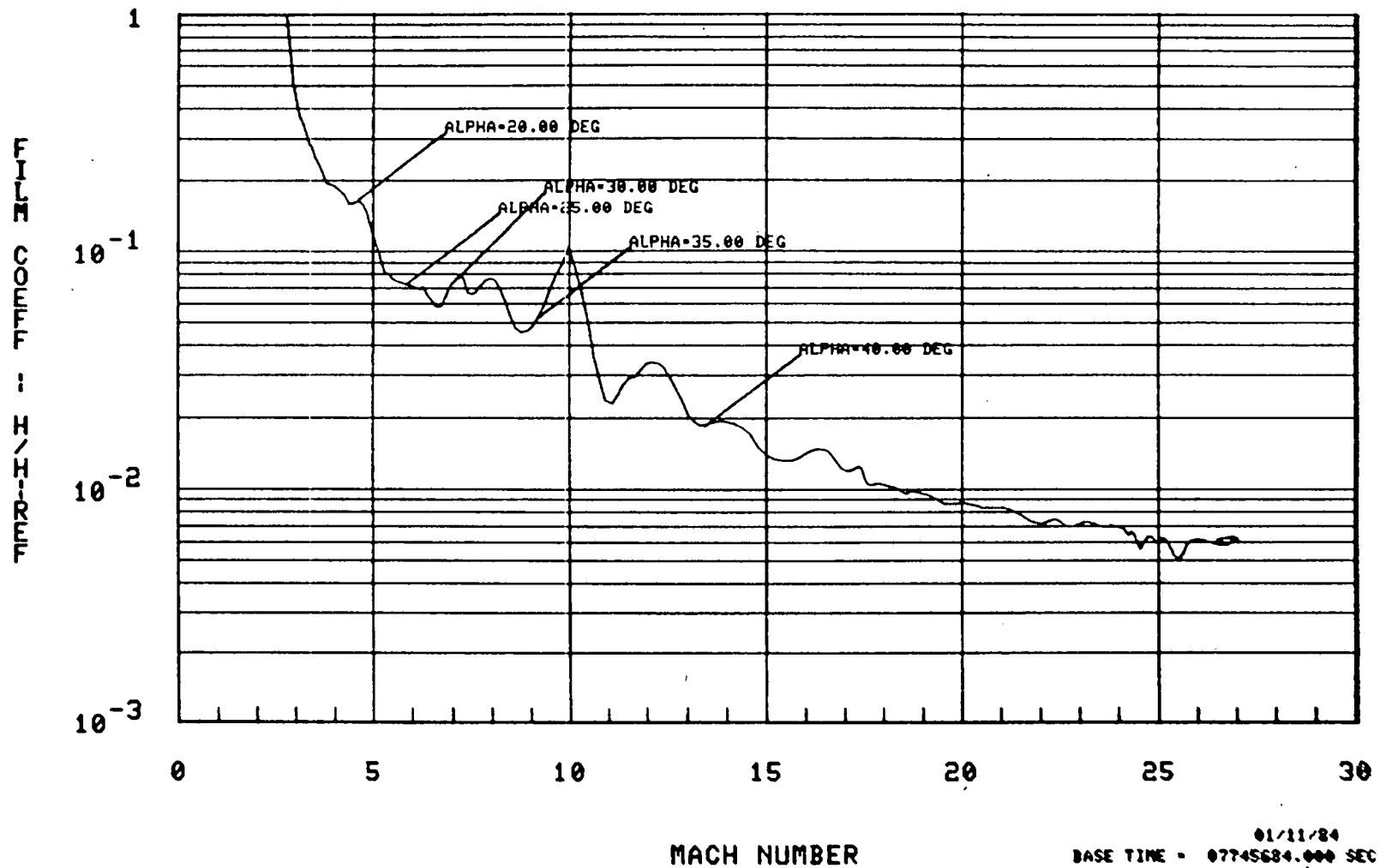
01/11/84

BASE TIME = 27550236.000 SEC.



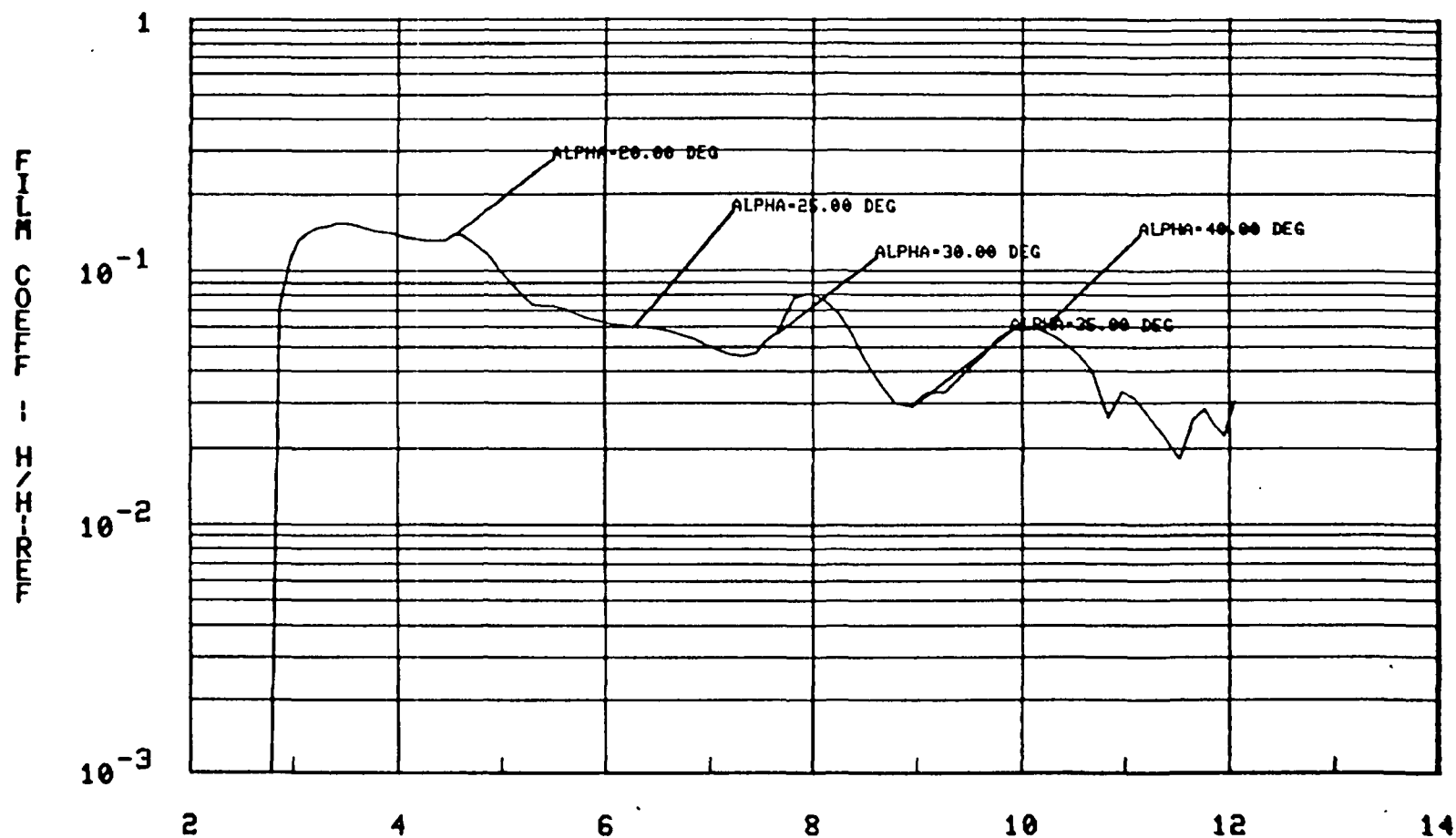
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

U07T9905A/H-REF 200-1440 SEC



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.55$ )  $Z=400$

U07T9905A/H-REF 965-1360 SEC

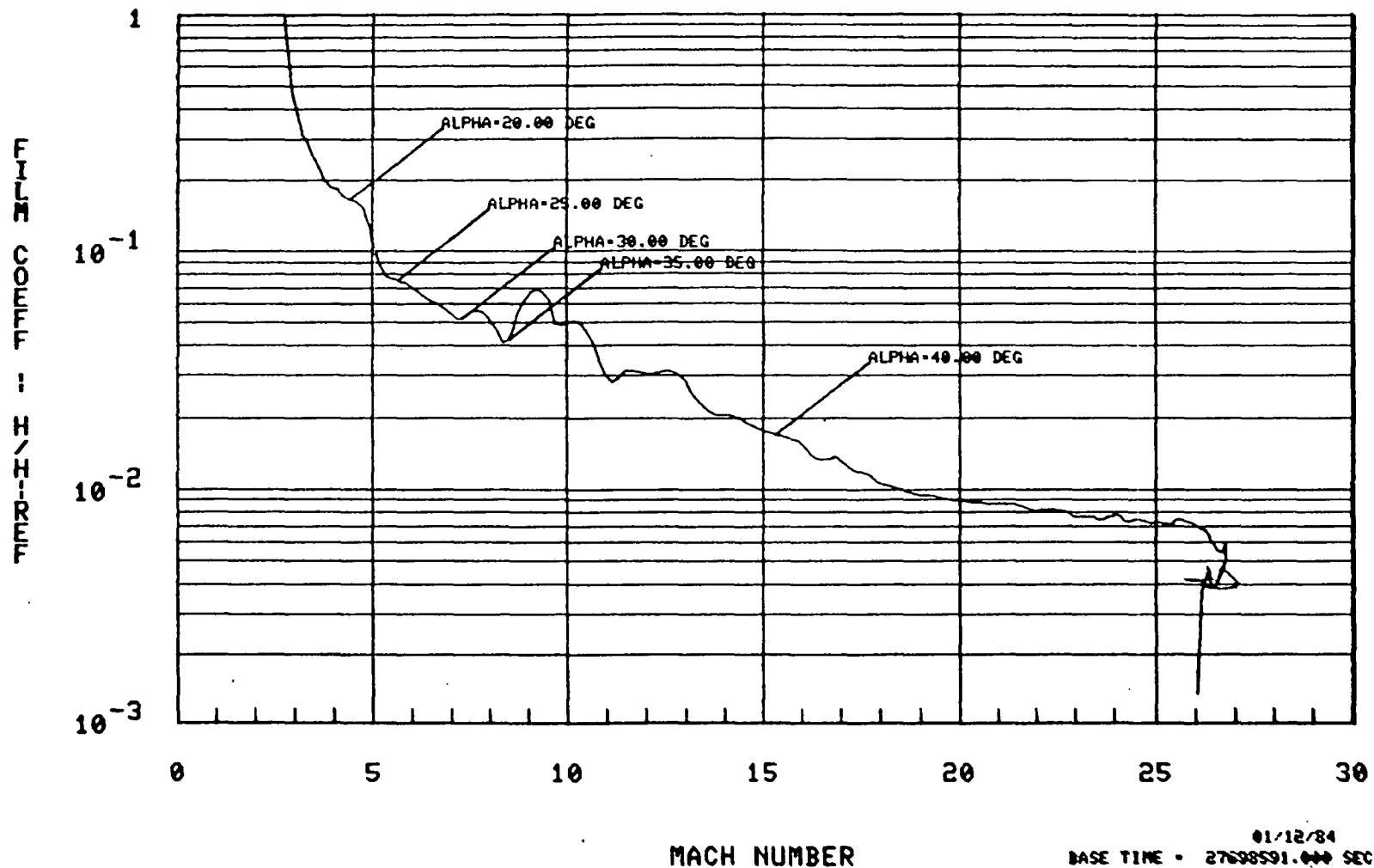


MACH NUMBER

01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

U07T9905A/H-REF 150-1430 SEC

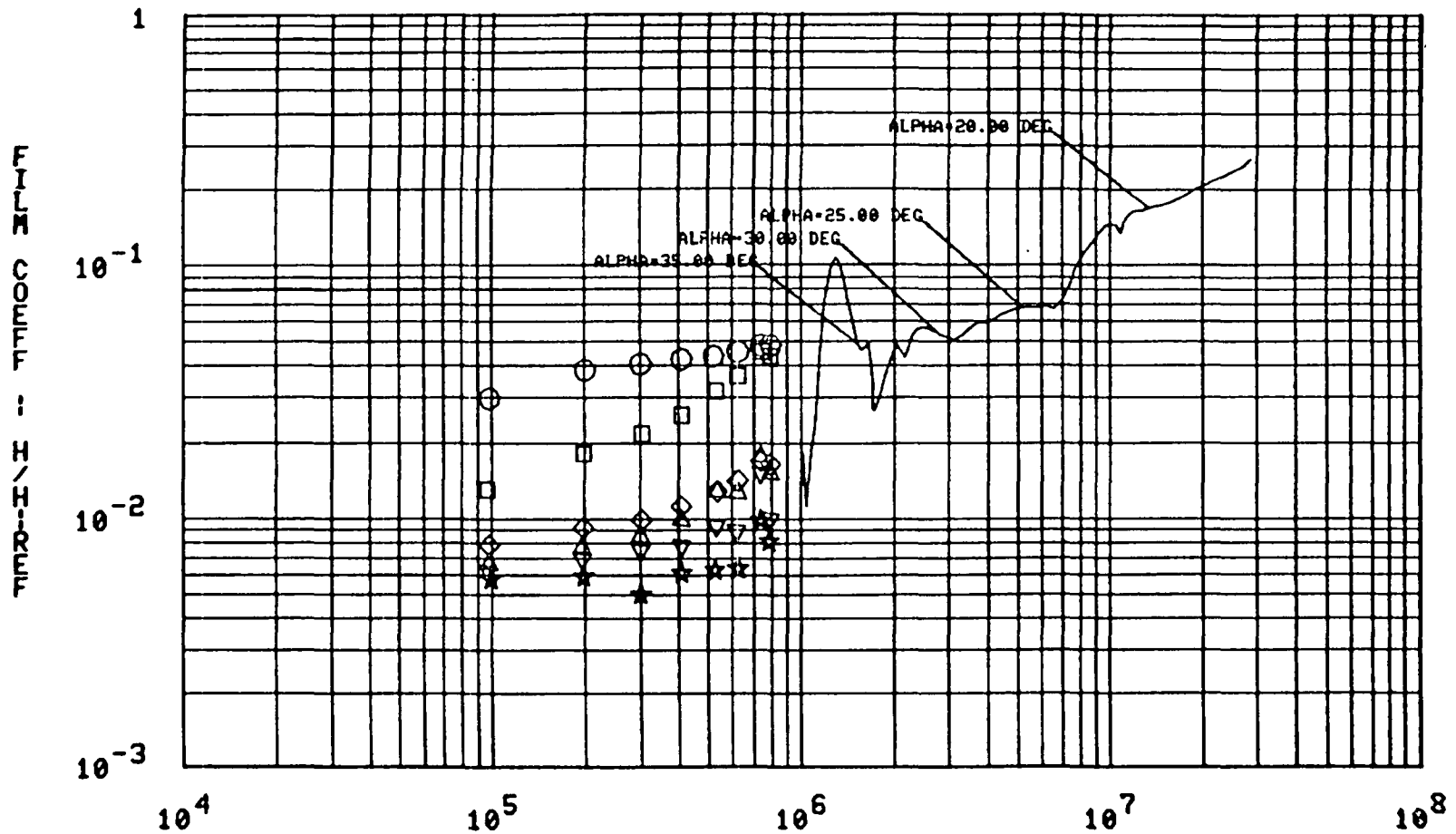


# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9905A/H-REF 1065-1500 SEC



REYNOLDS NUMBER (NS)

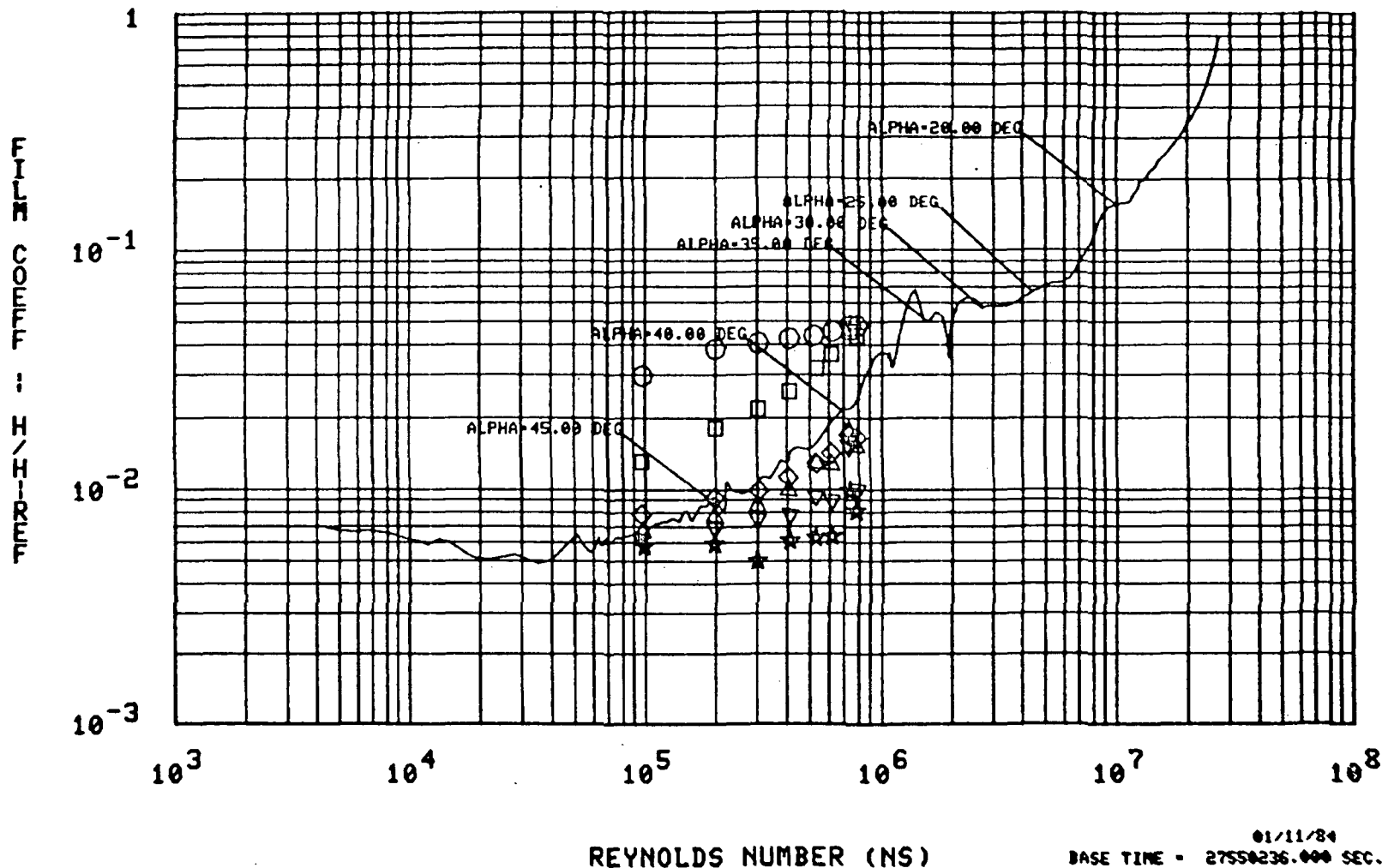
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9905A/H-REF 200-1530 SEC

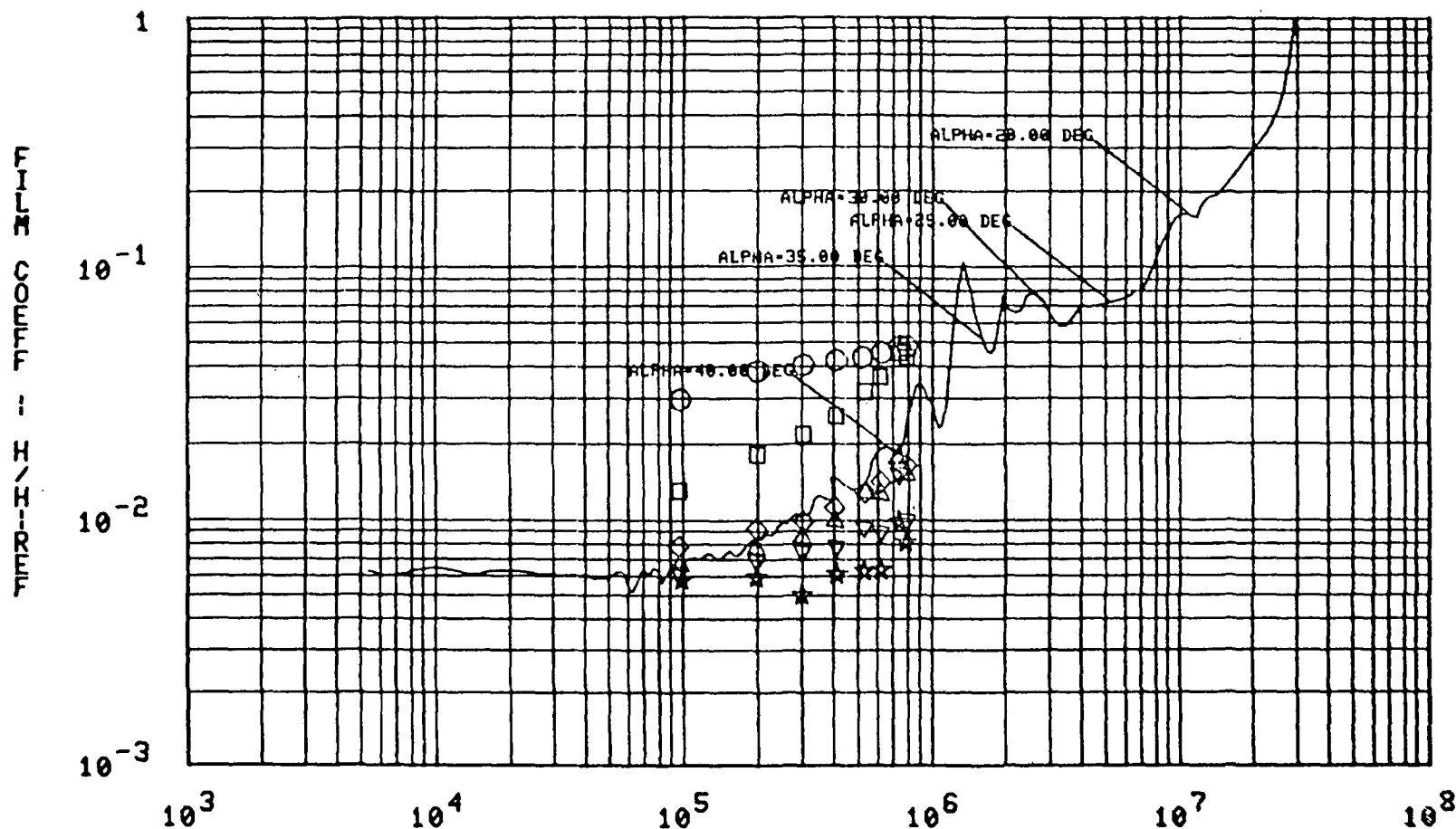


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9905A/H-REF 200-1440 SEC



B-213

REYNOLDS NUMBER (NS)

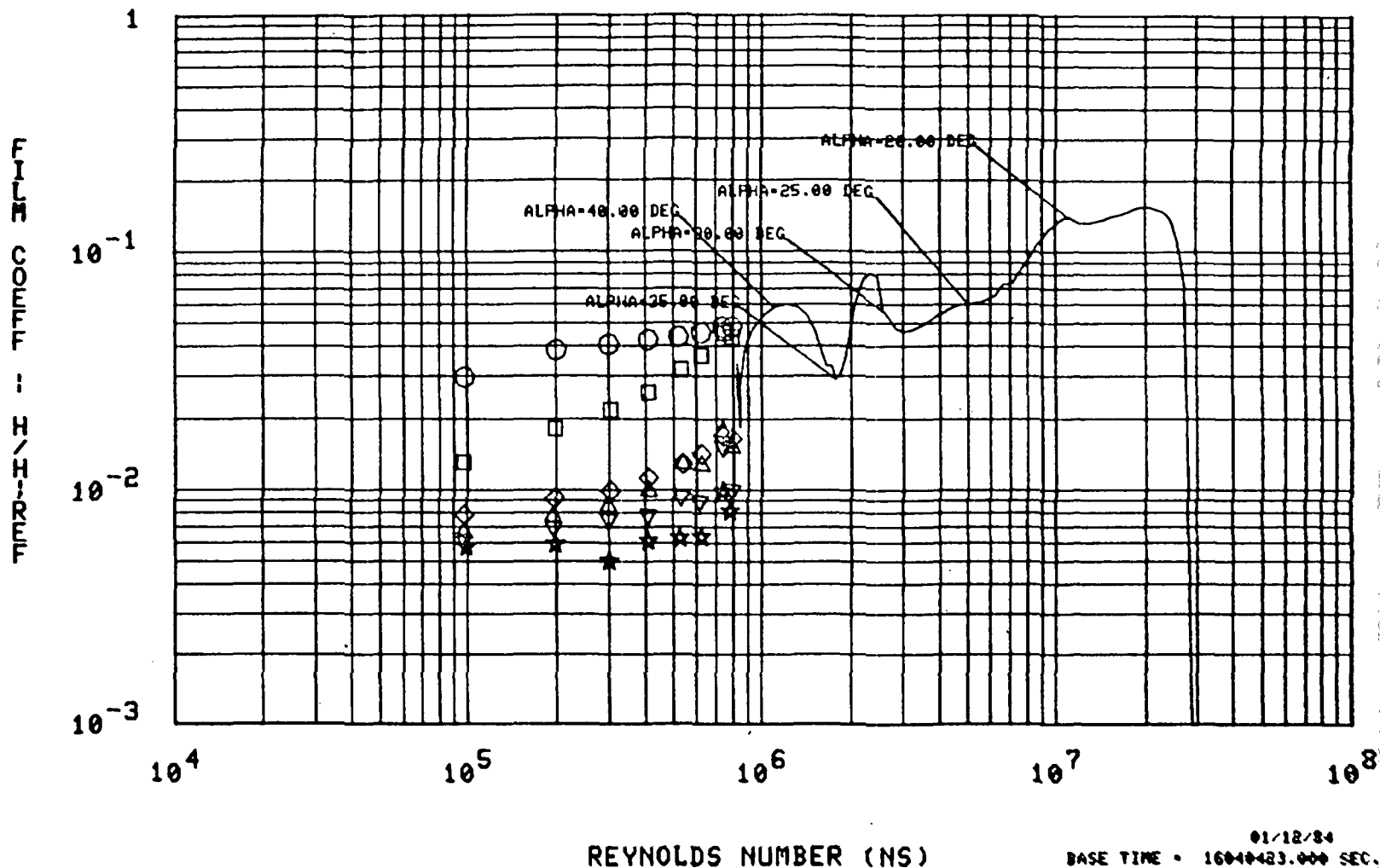
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9905A/H-REF 965-1360 SEC



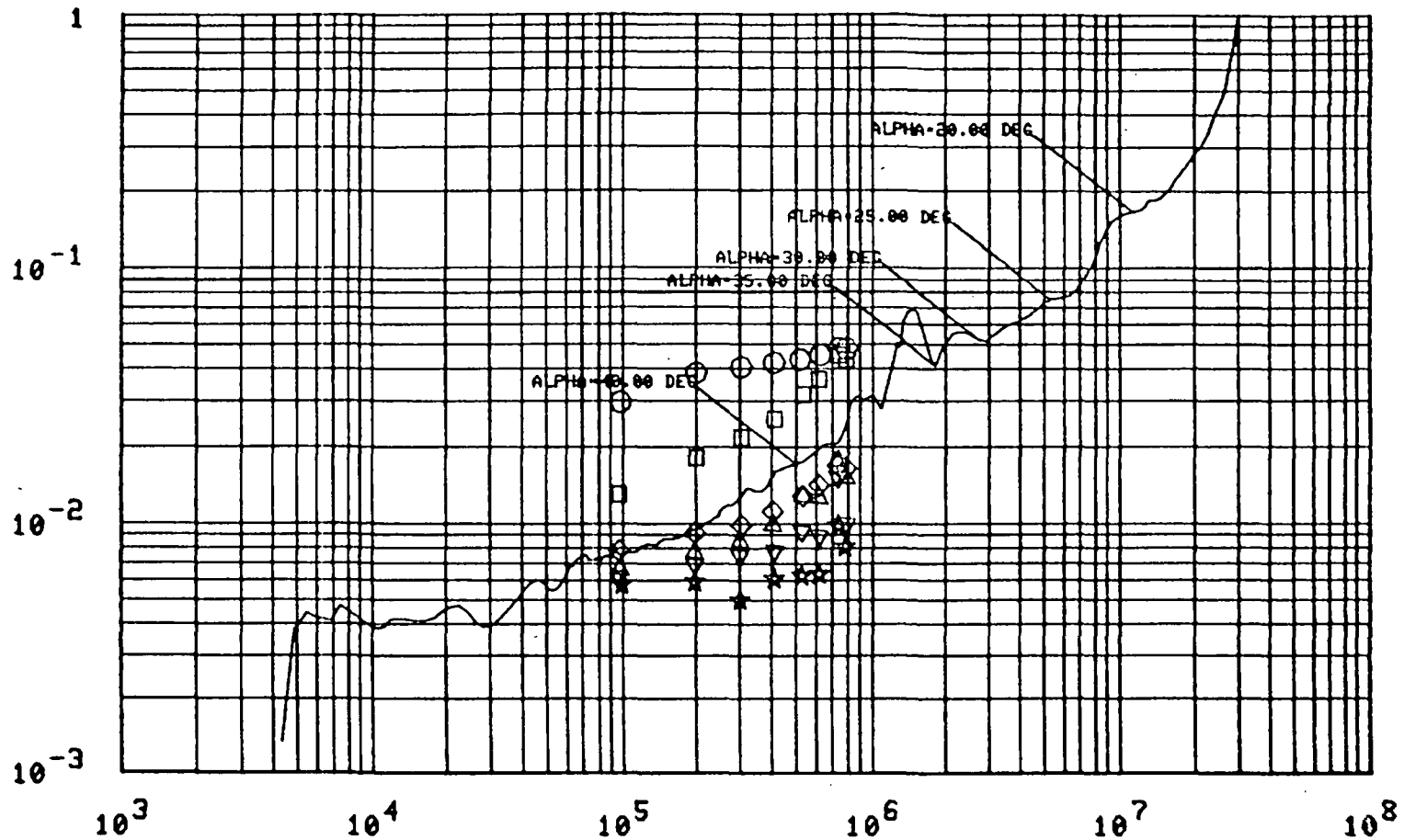
# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.55$ ) $Z=400$

○  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9905A/H-REF 150-1430 SEC

TIME COUL - IN-REF



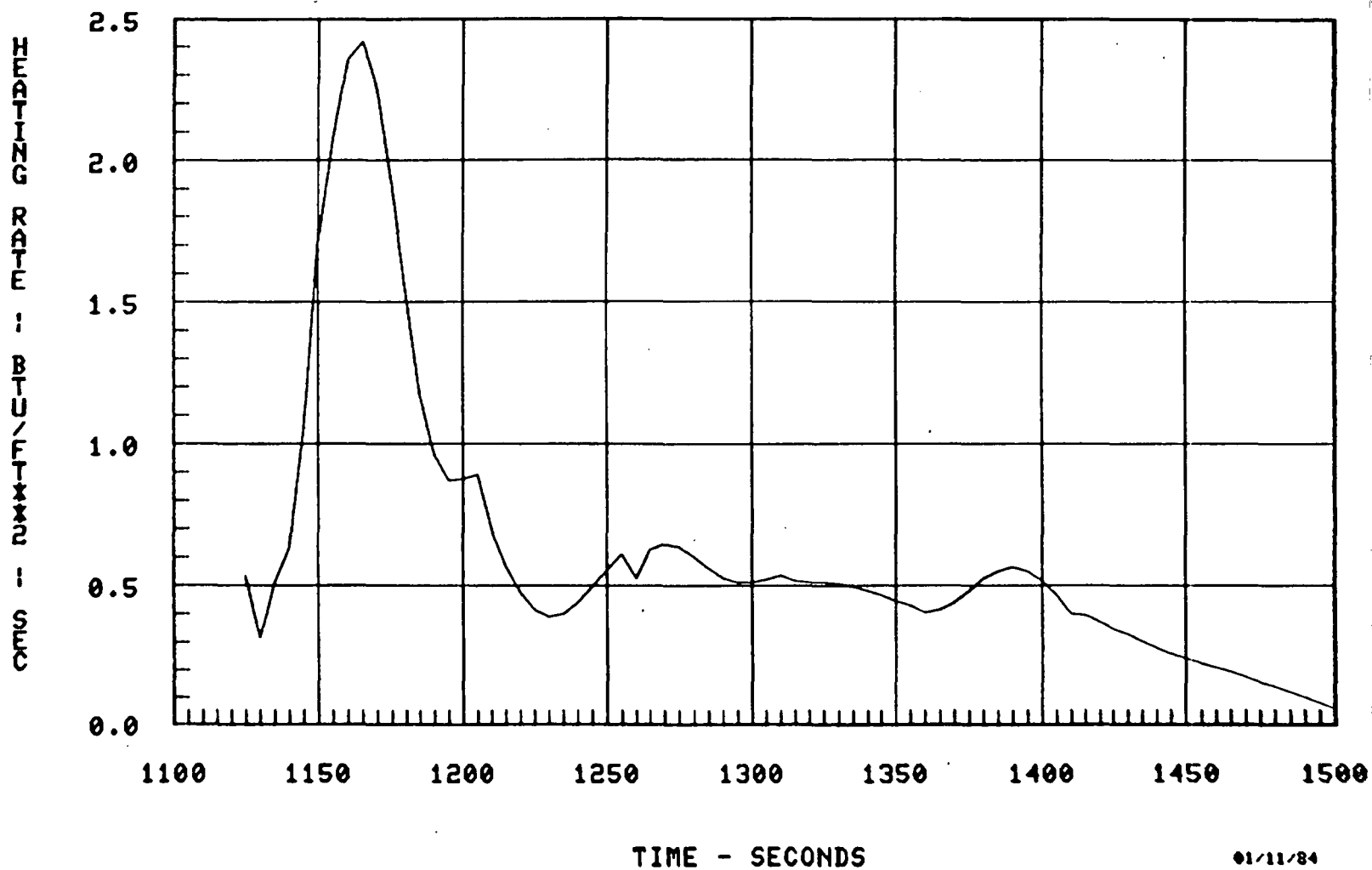
REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.



STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.55$ )  $Z=400$

U07T9905A

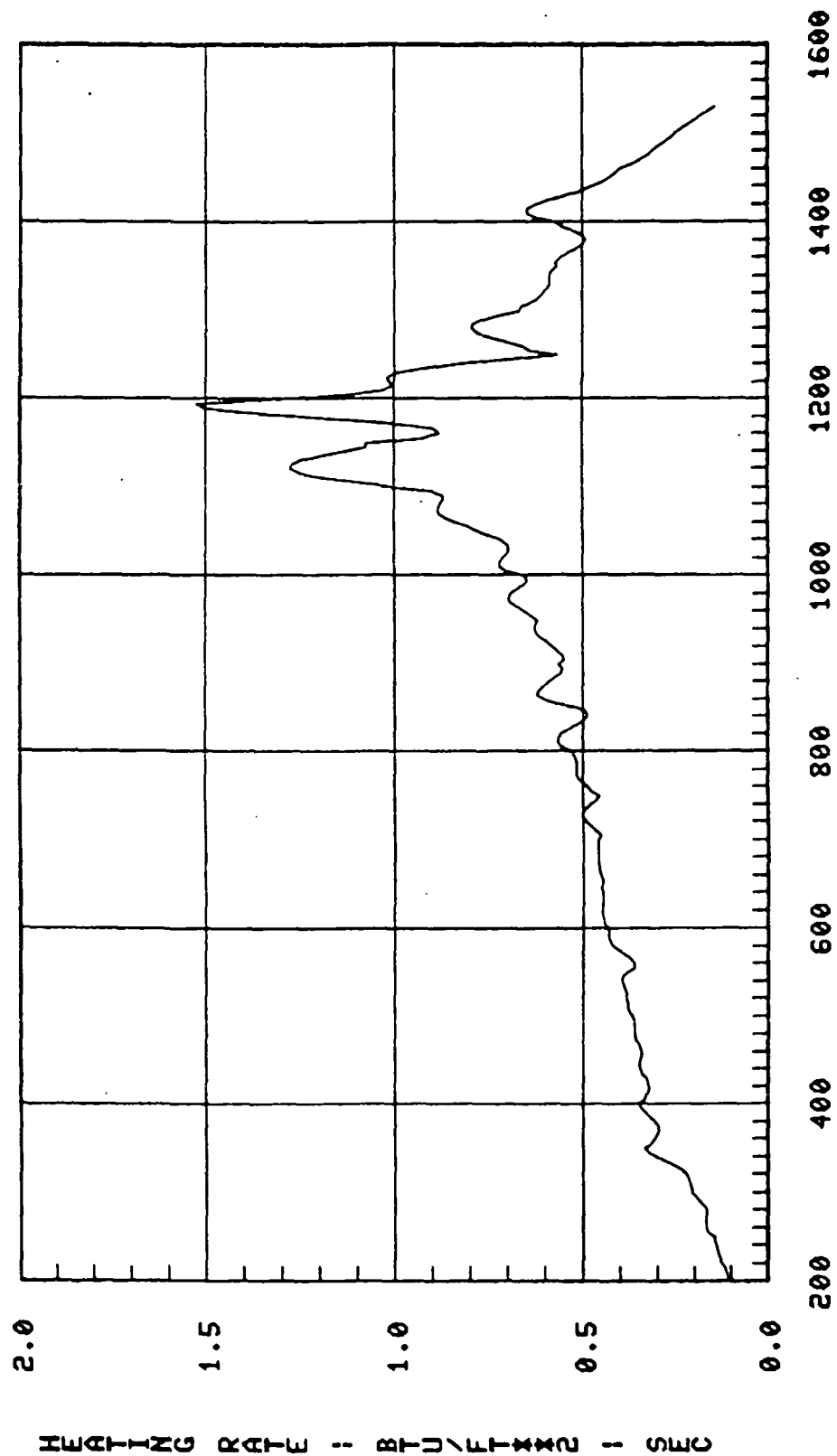


B-216

01/11/84

STS-2 (107 FT LENGTH SIDE FUS X/L=0.55) Z=400

U07T9905A

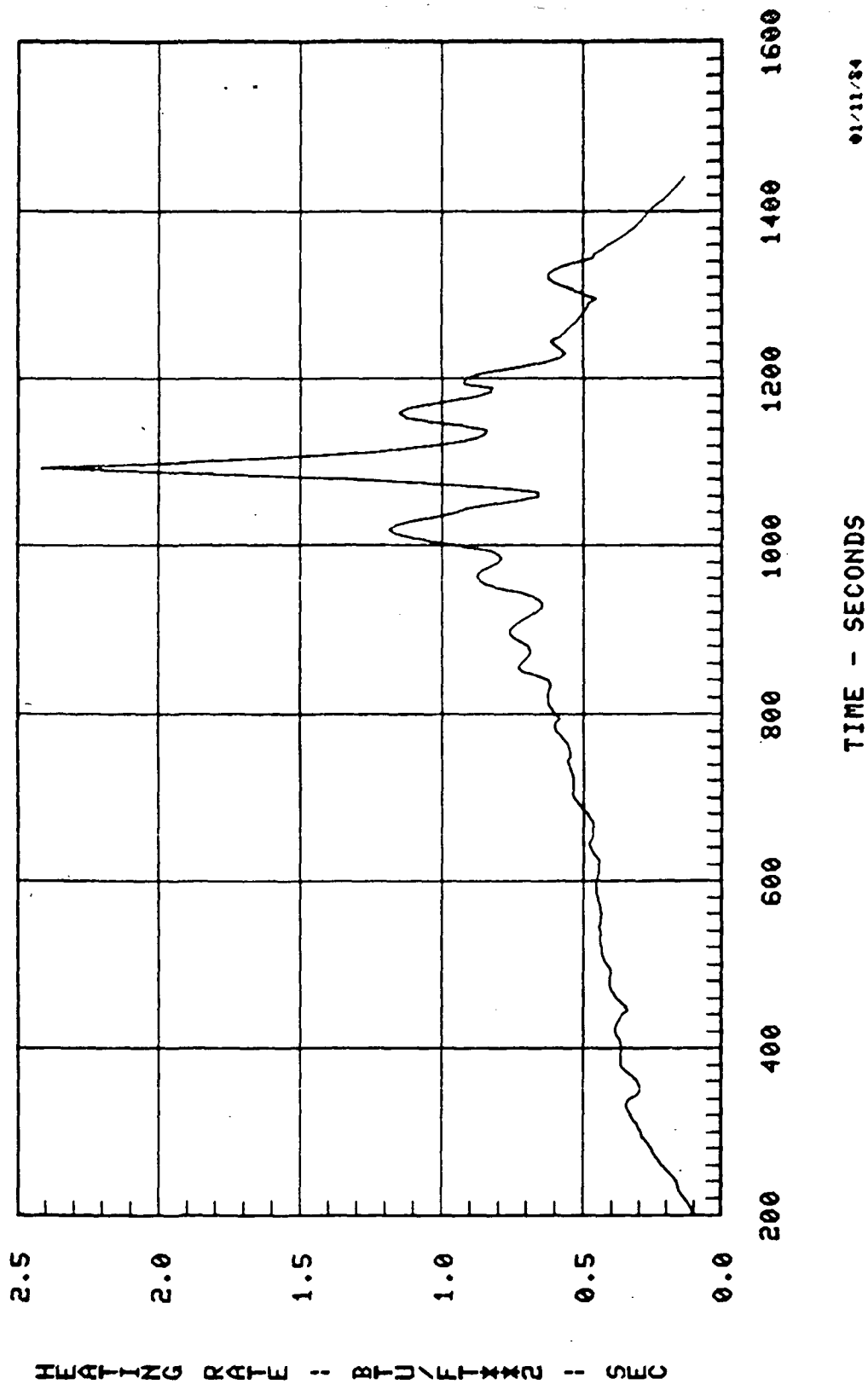


TIME - SECONDS

01/11/84

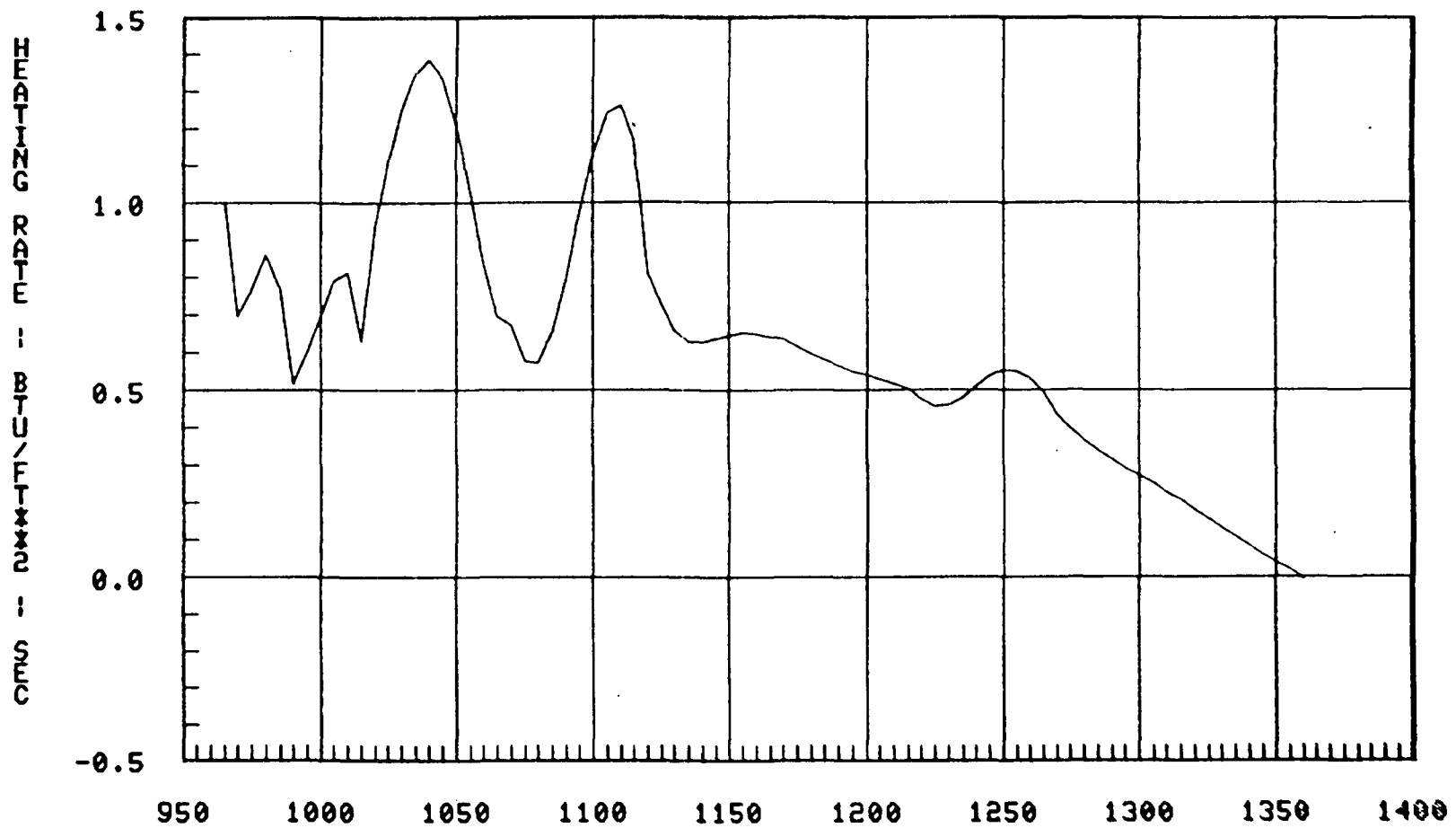
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.55$ ) Z=400

U07T9905A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.55$ )  $Z=400$

U07T9905A

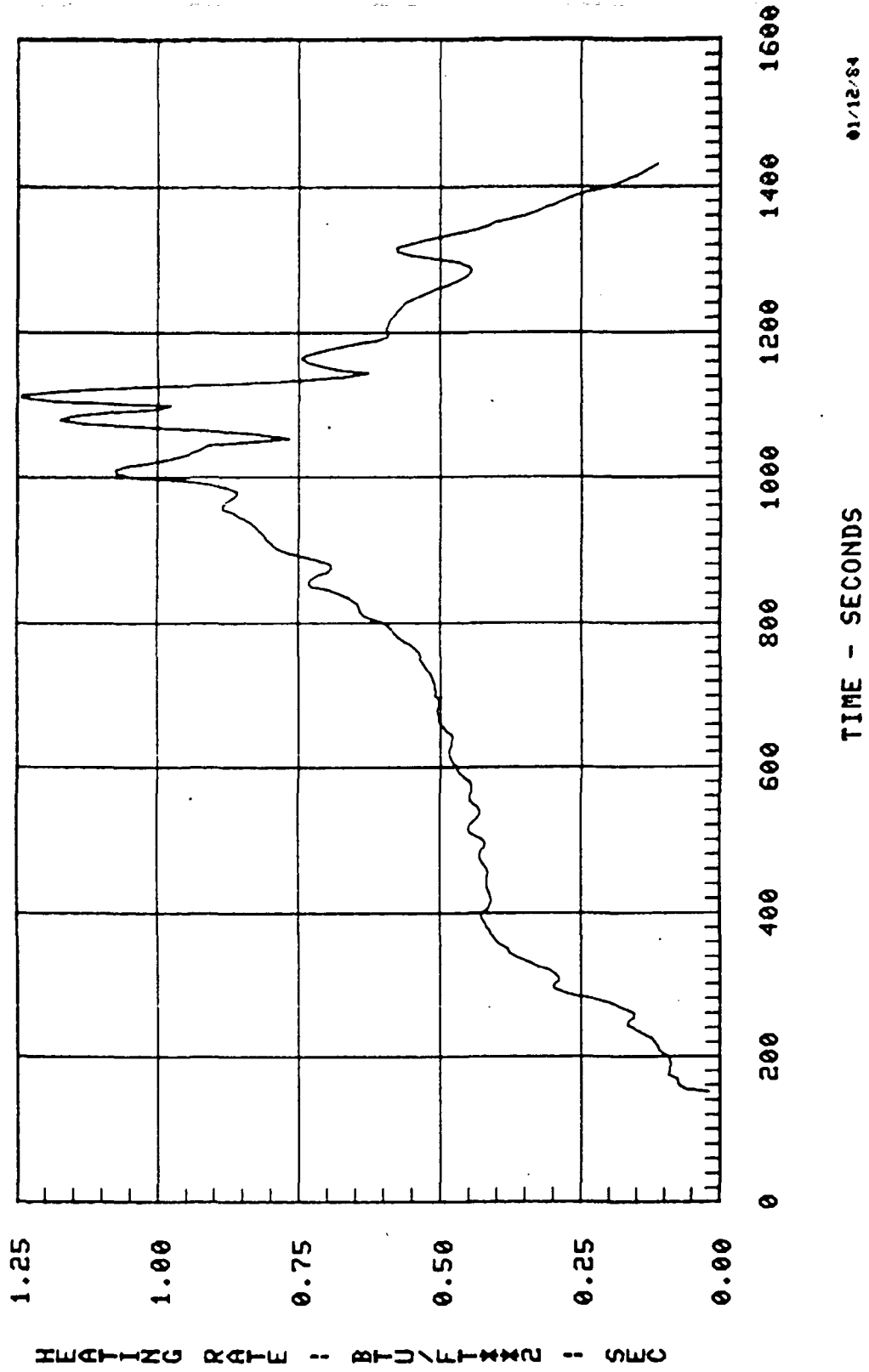


B-219

01/12/84

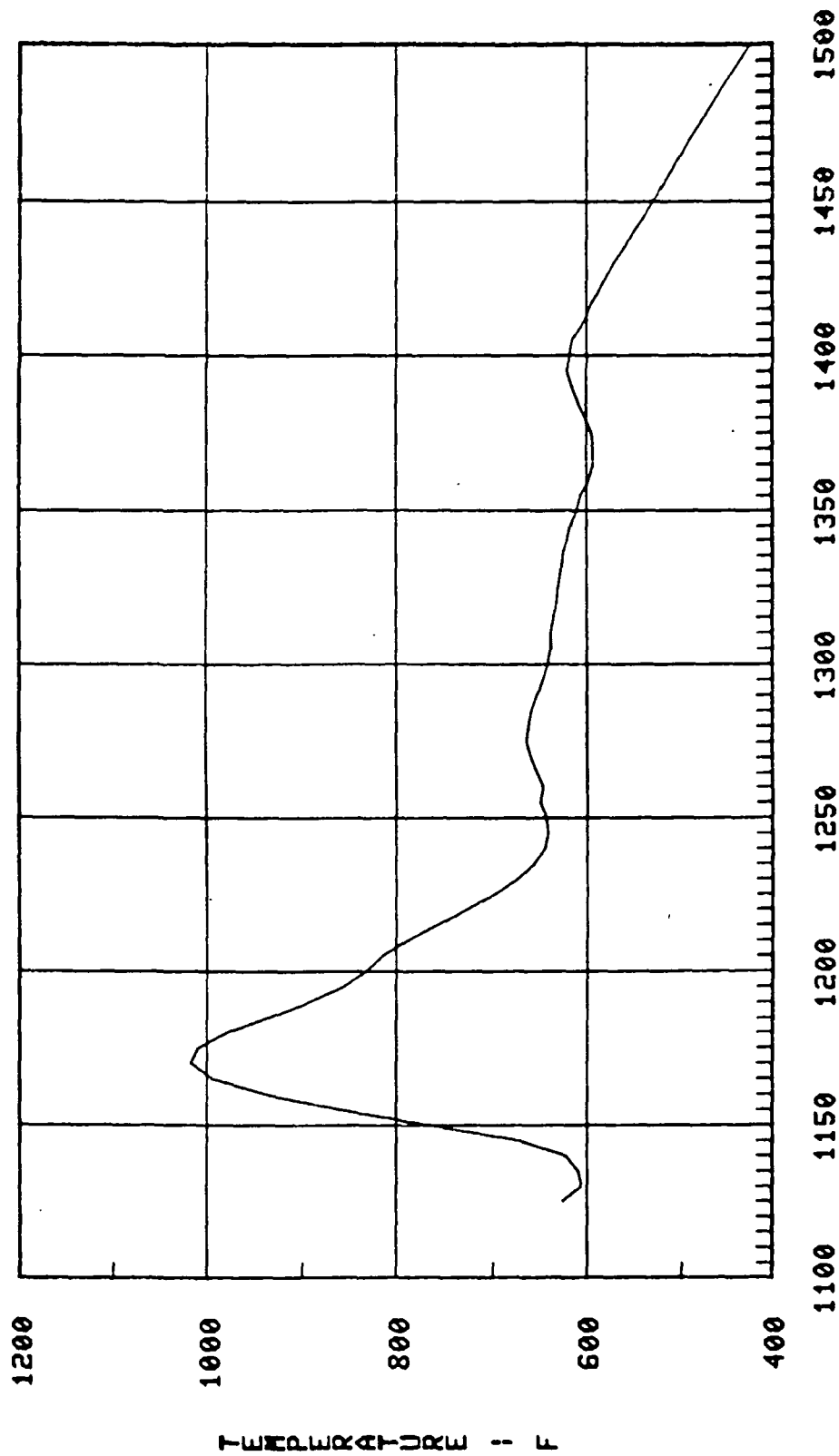
STS-5 (107 FT LENGTH SIDE FUS X/L=0.55) Z=400

U07T905A



STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.55$ ) Z=400

U07T9905A

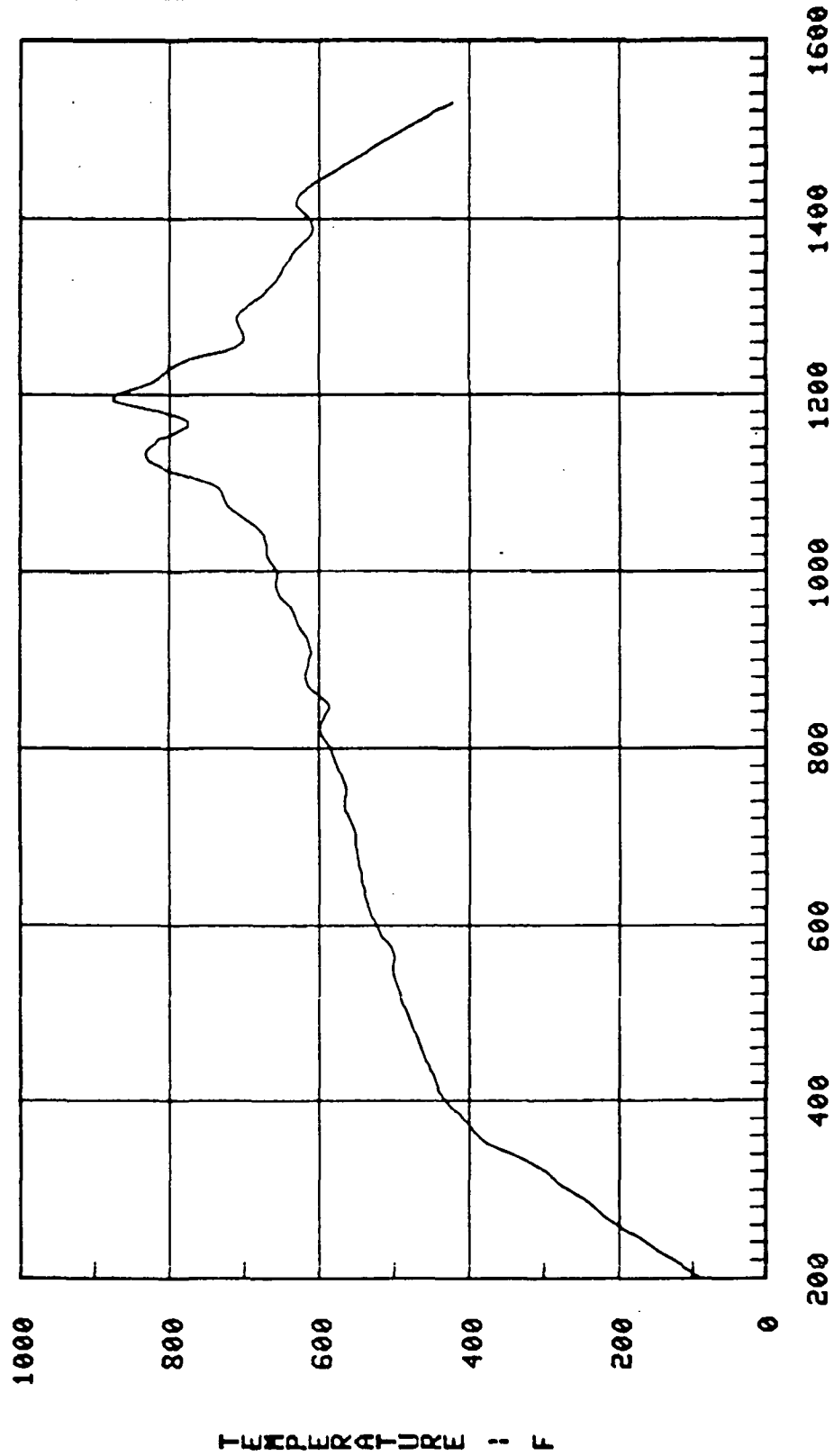


TIME - SECONDS

01/11/84

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.55$ )  $Z=400$

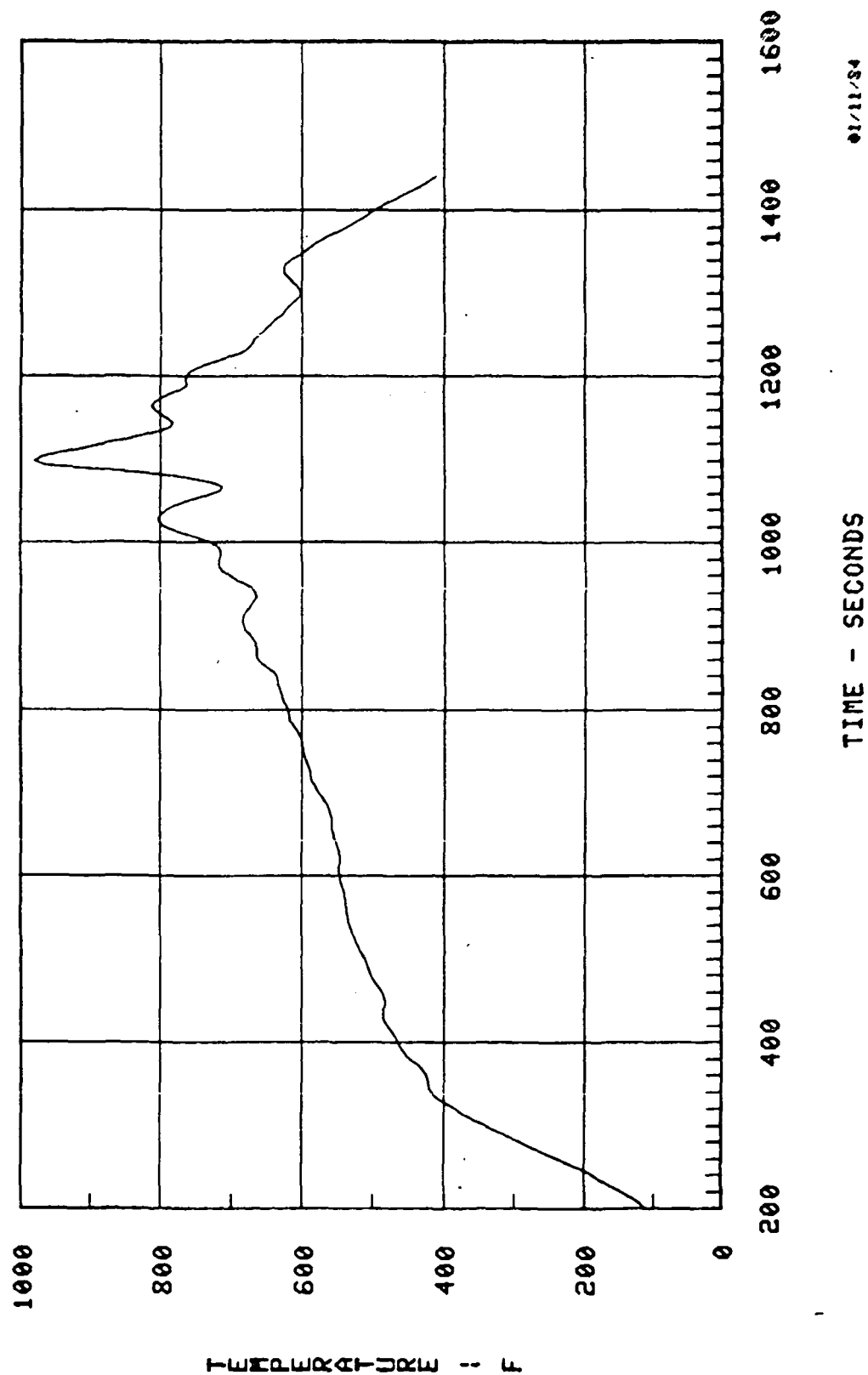
U07T905A



01/11/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.55$ ) Z=400

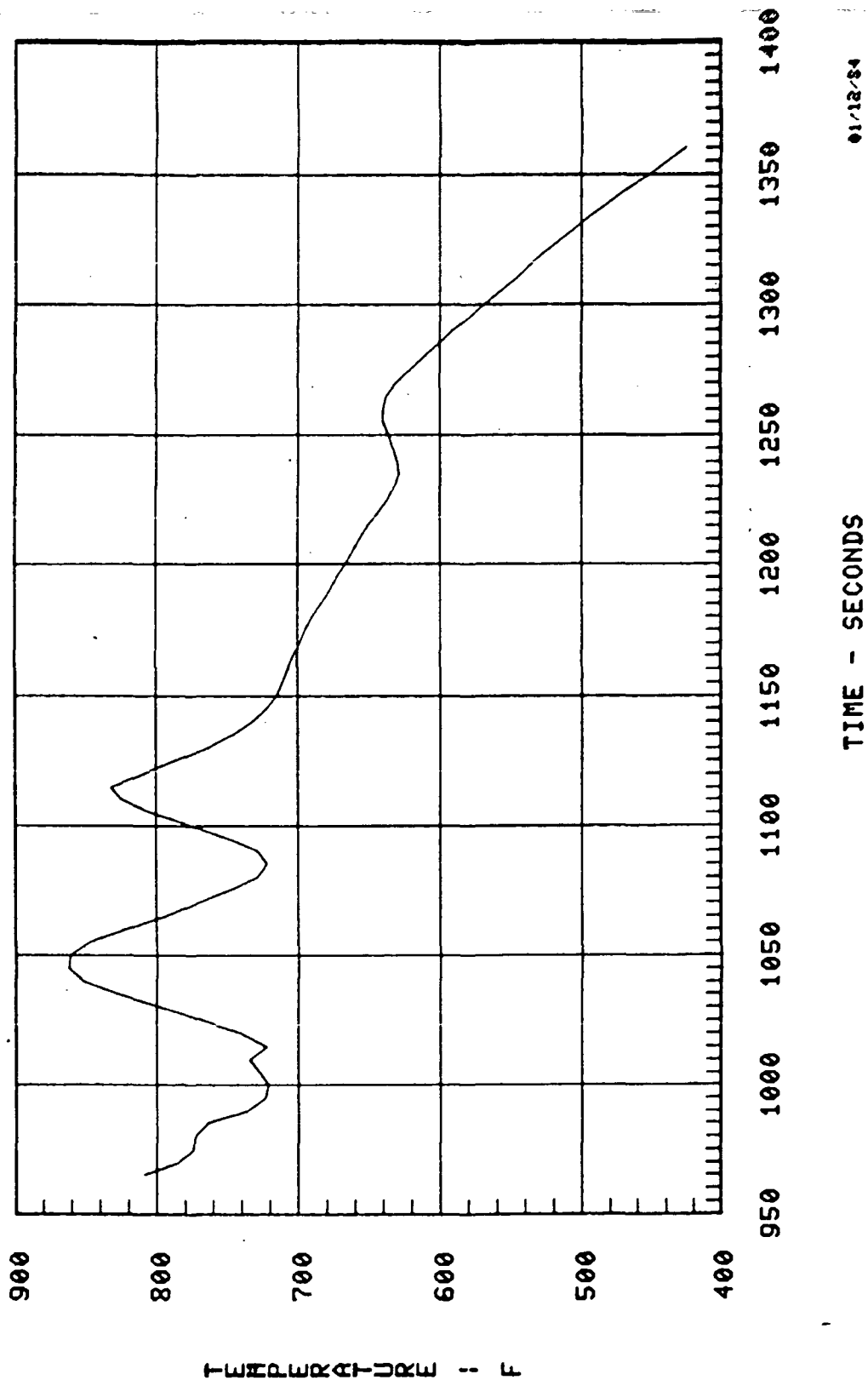
U07T9905A





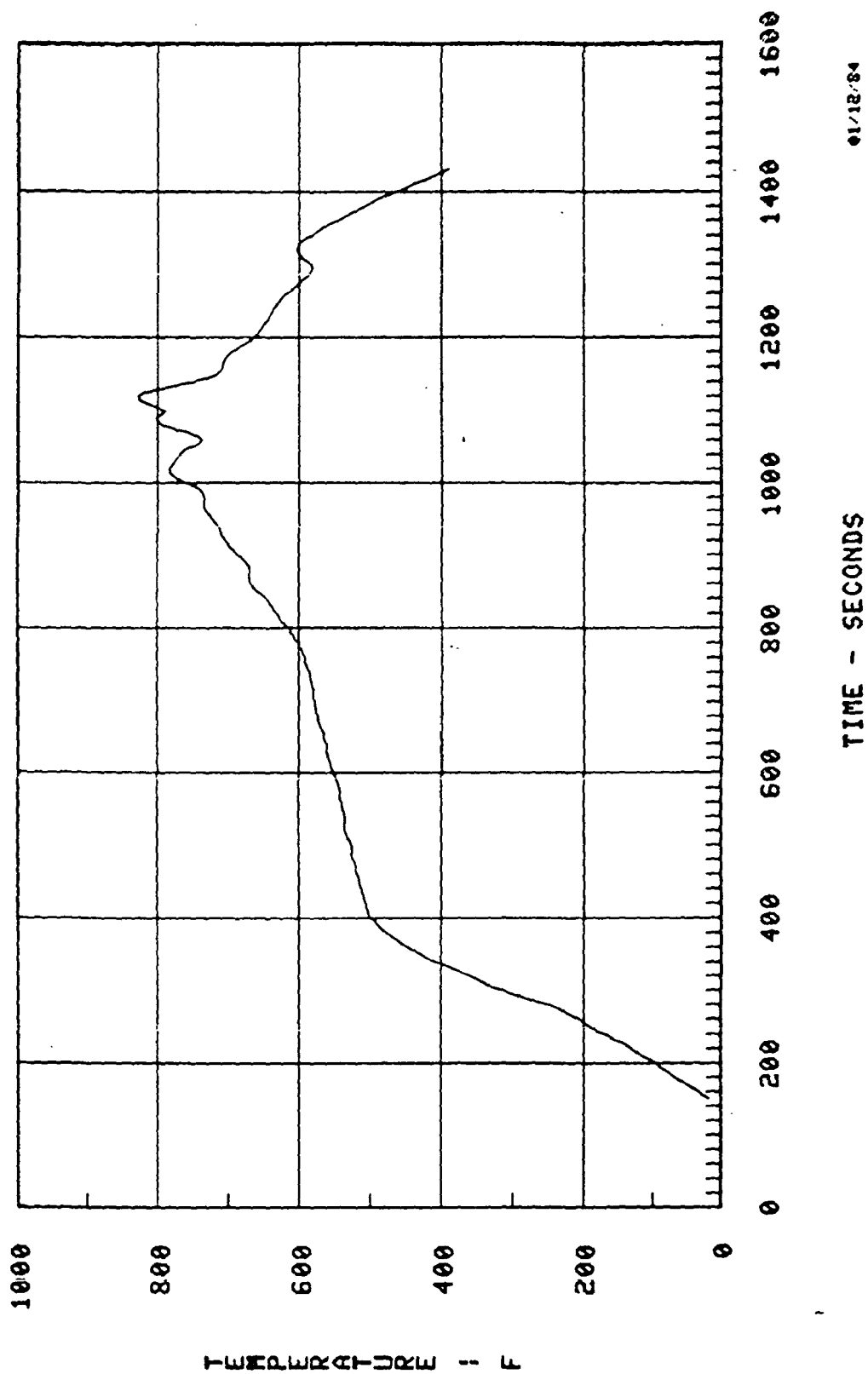
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.55$ ) Z=400

U07T905A



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.55$ )  $Z=400$

U07T905A



01/12/84

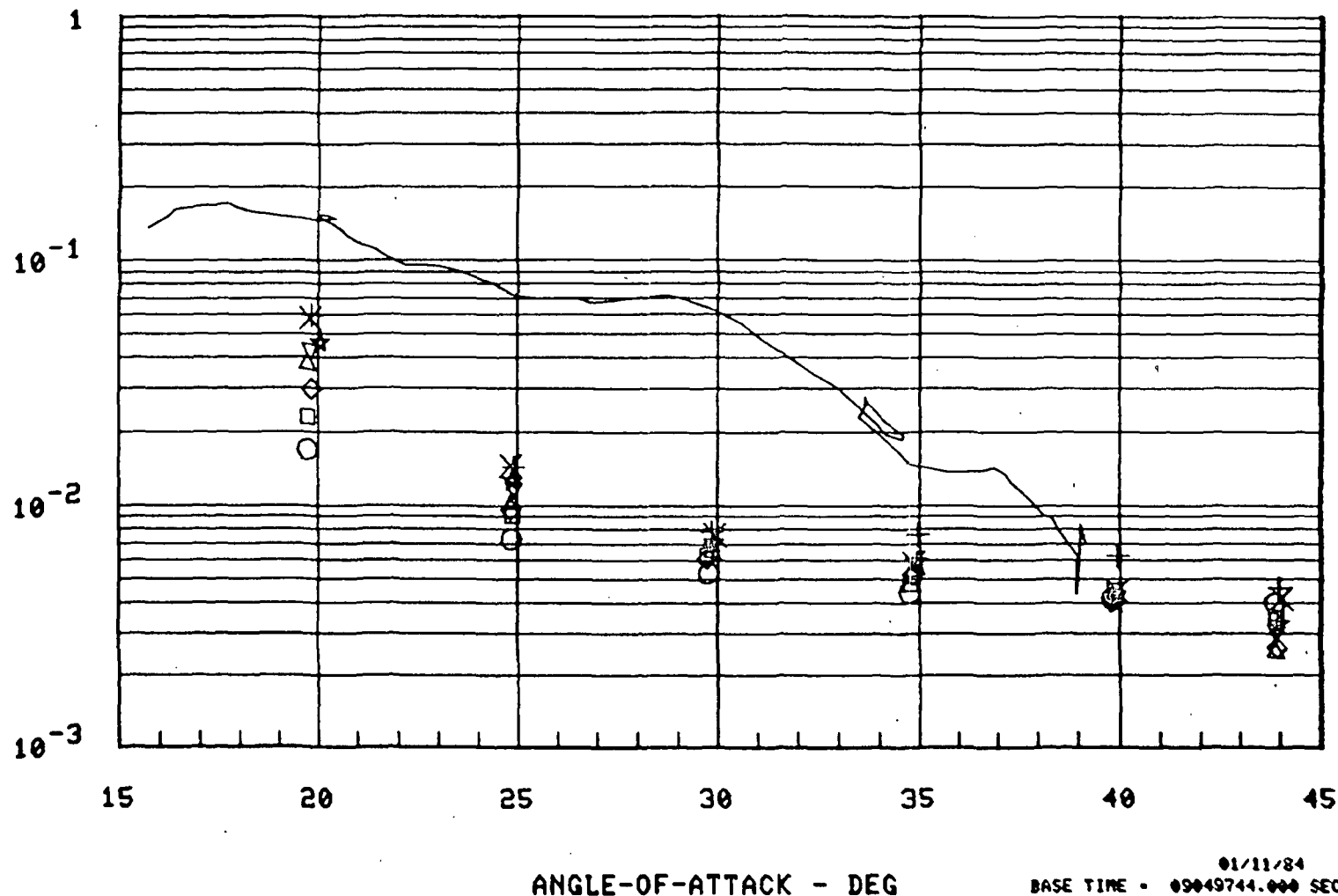
# STS-1 (107 FT LENGTH SIDE FUS X/L=0.60) Z=400

○  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9903A/H-REF 1065-1500 SEC

FILE CODE - H/H-REF



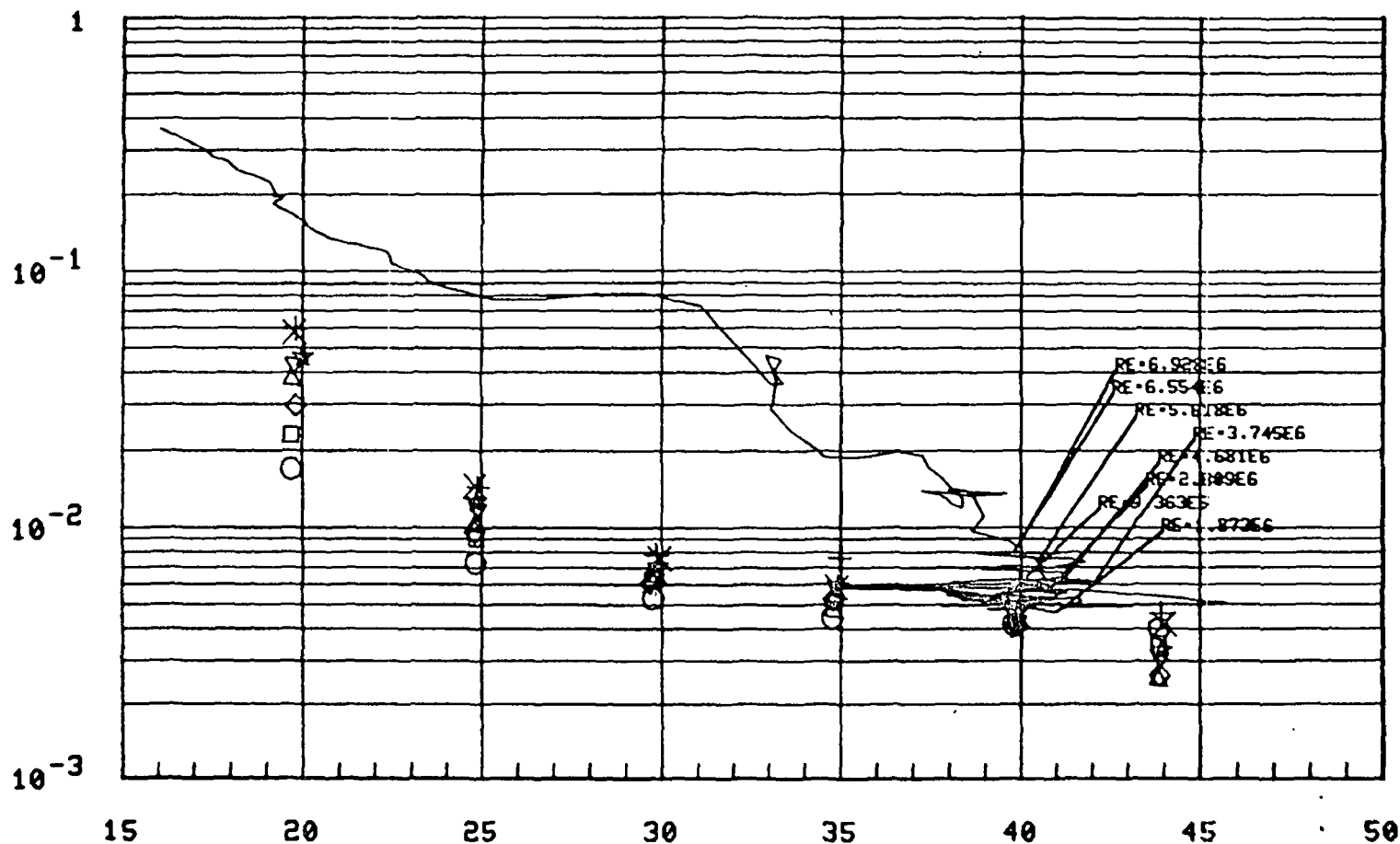
# STS-2 (107 FT LENGTH SIDE FUS X/L=0.60) Z=400

○  
□  
◇  
△  
▽  
★  
+  
×X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9903A/H-REF 200-1530 SEC

FILE COMPLE - H/H-REF



ANGLE-OF-ATTACK - DEG

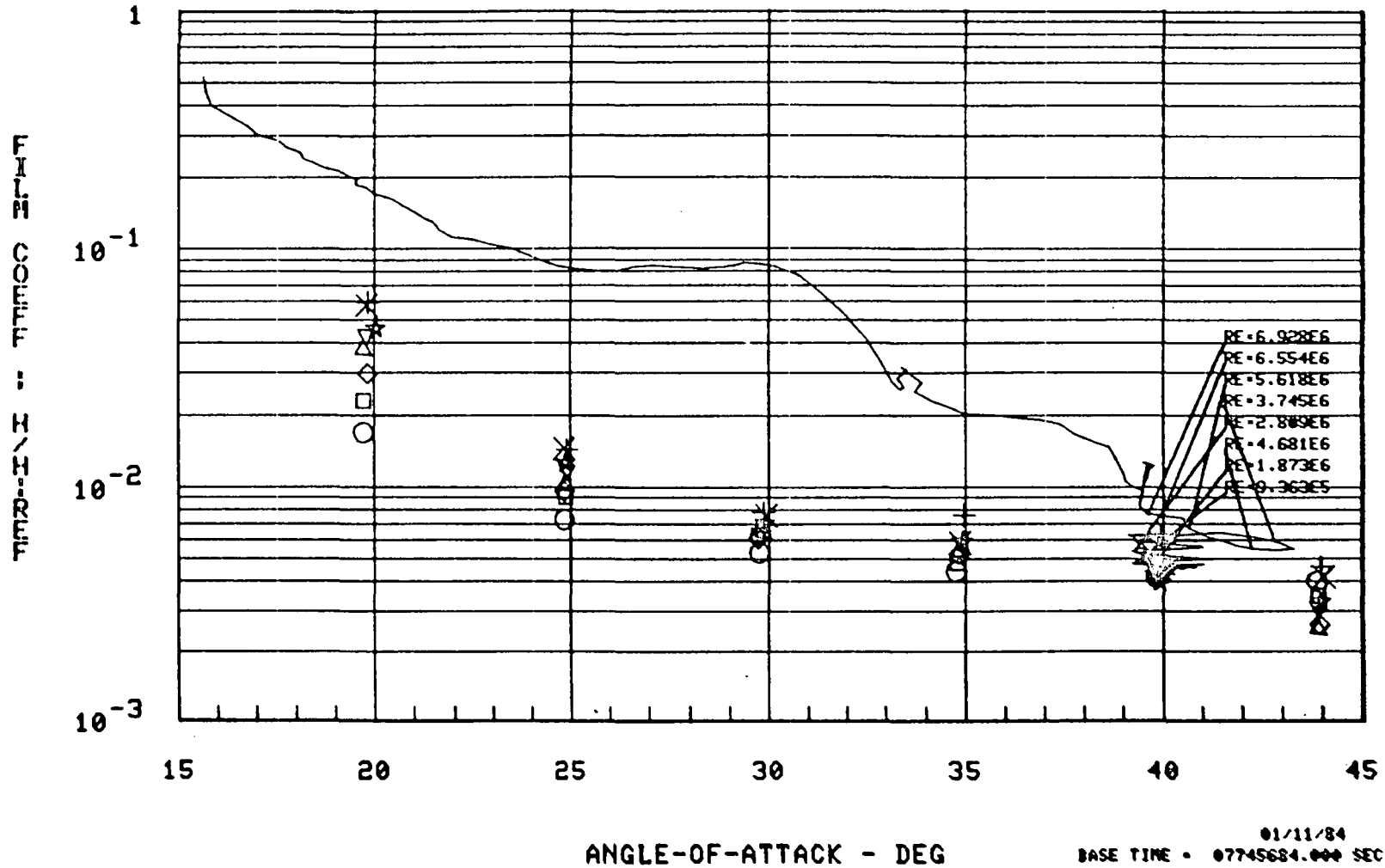
01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9903A/H-REF 200-1440 SEC



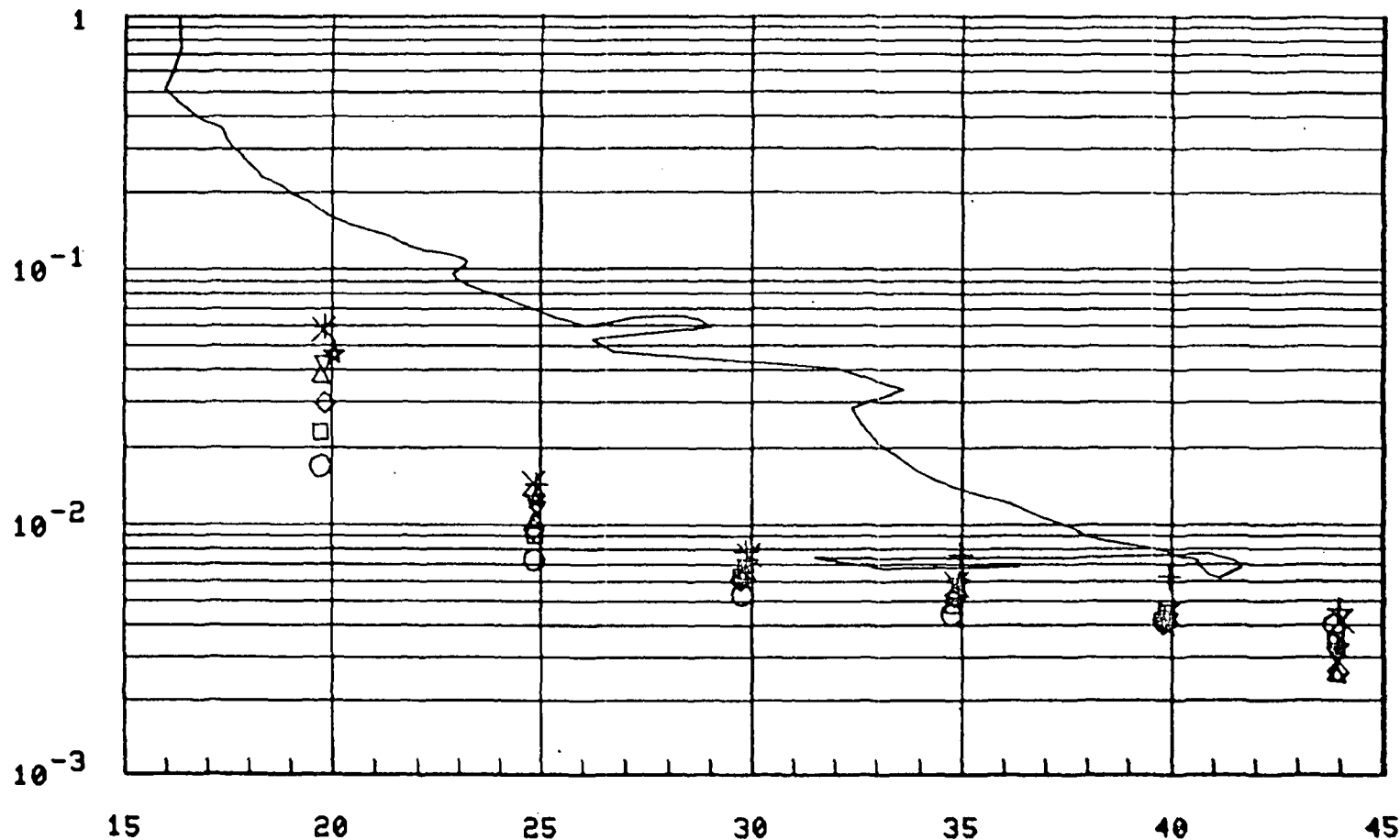
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9903A/H-REF 965-1360 SEC

LINE CODE - H/H-REF



ANGLE-OF-ATTACK - DEG

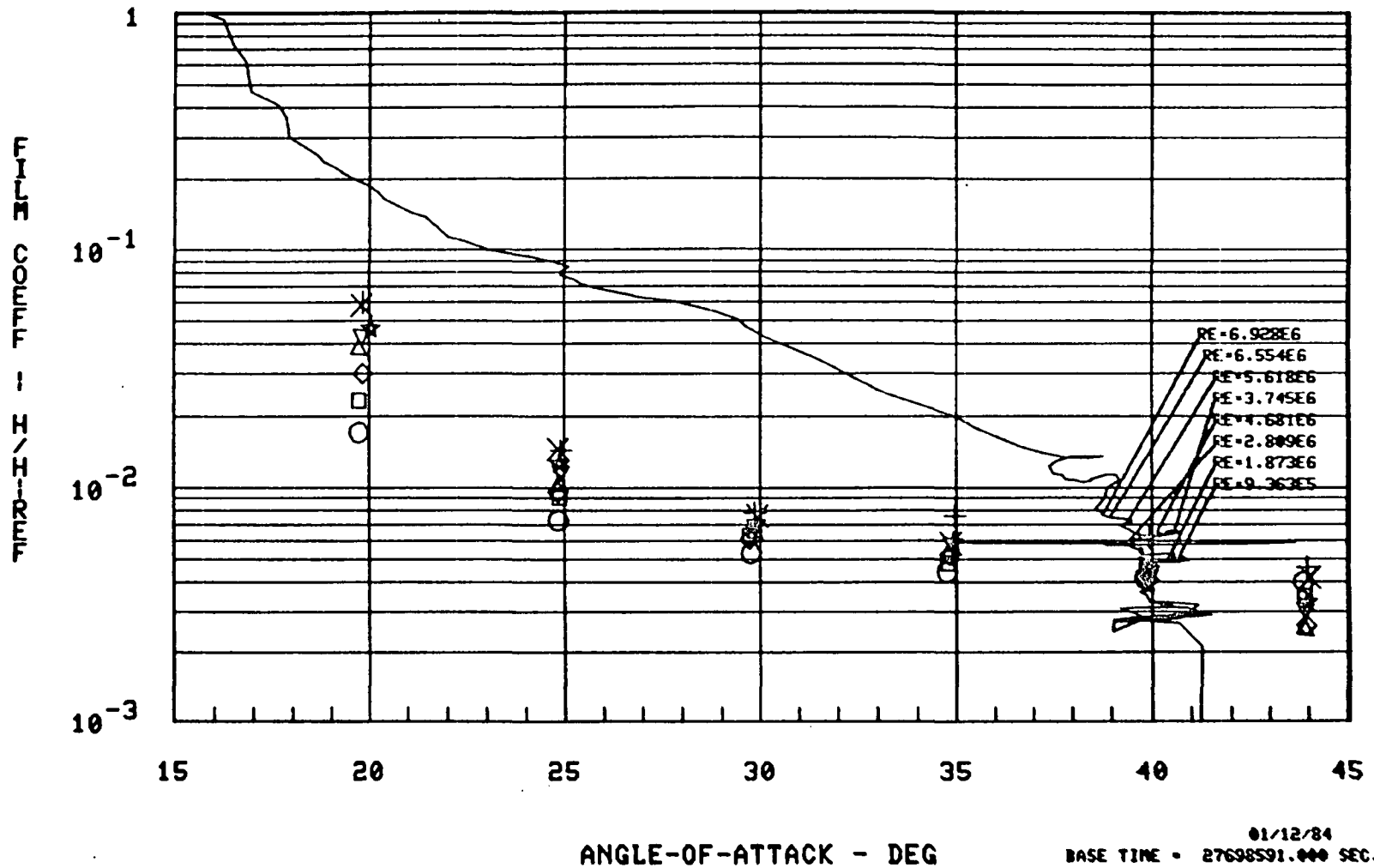
01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
□  
△  
▽  
★  
+  
X

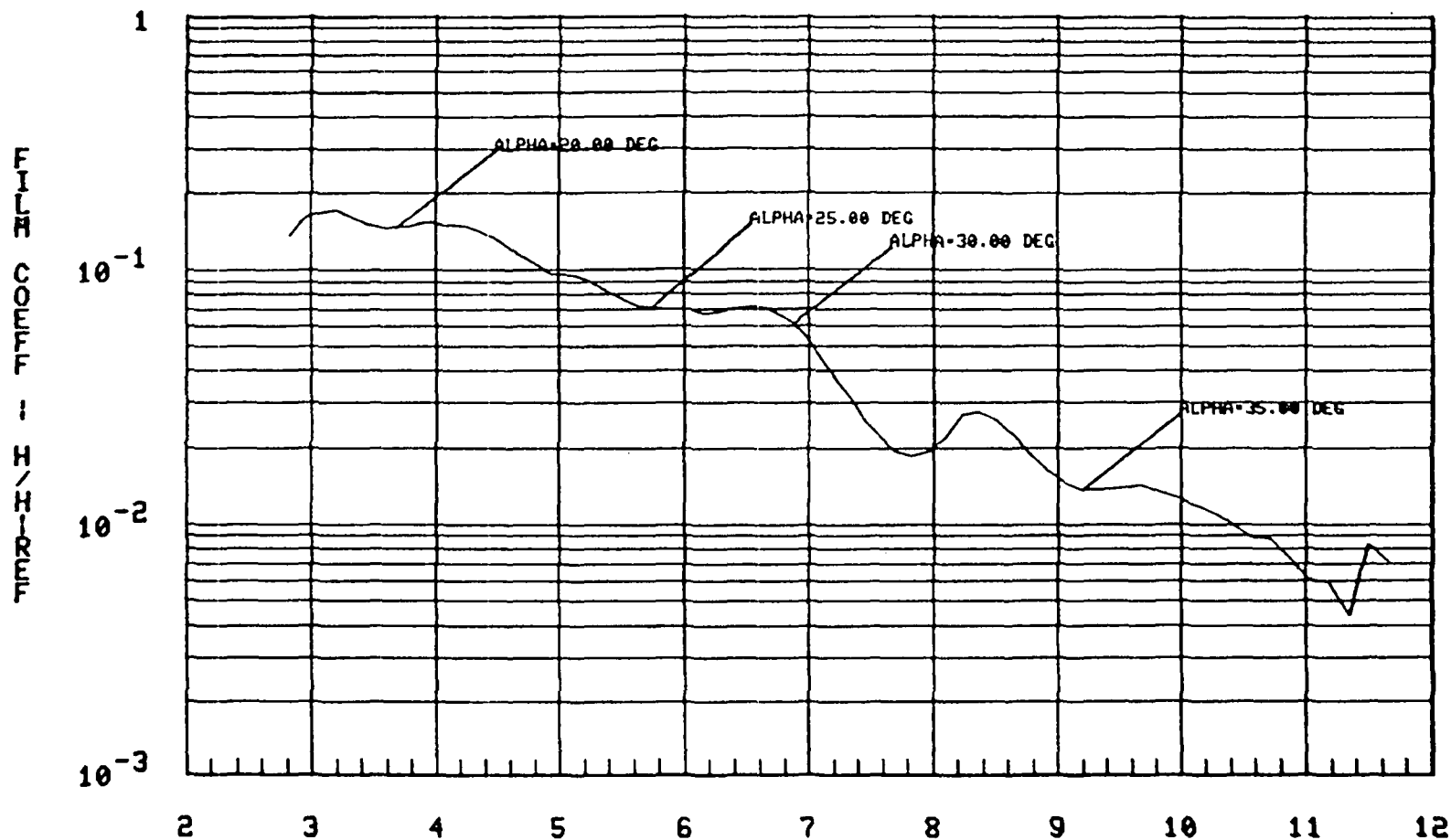
OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9903A/H-REF 150-1430 SEC



STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

U07T9903A/H-REF 1065-1500 SEC



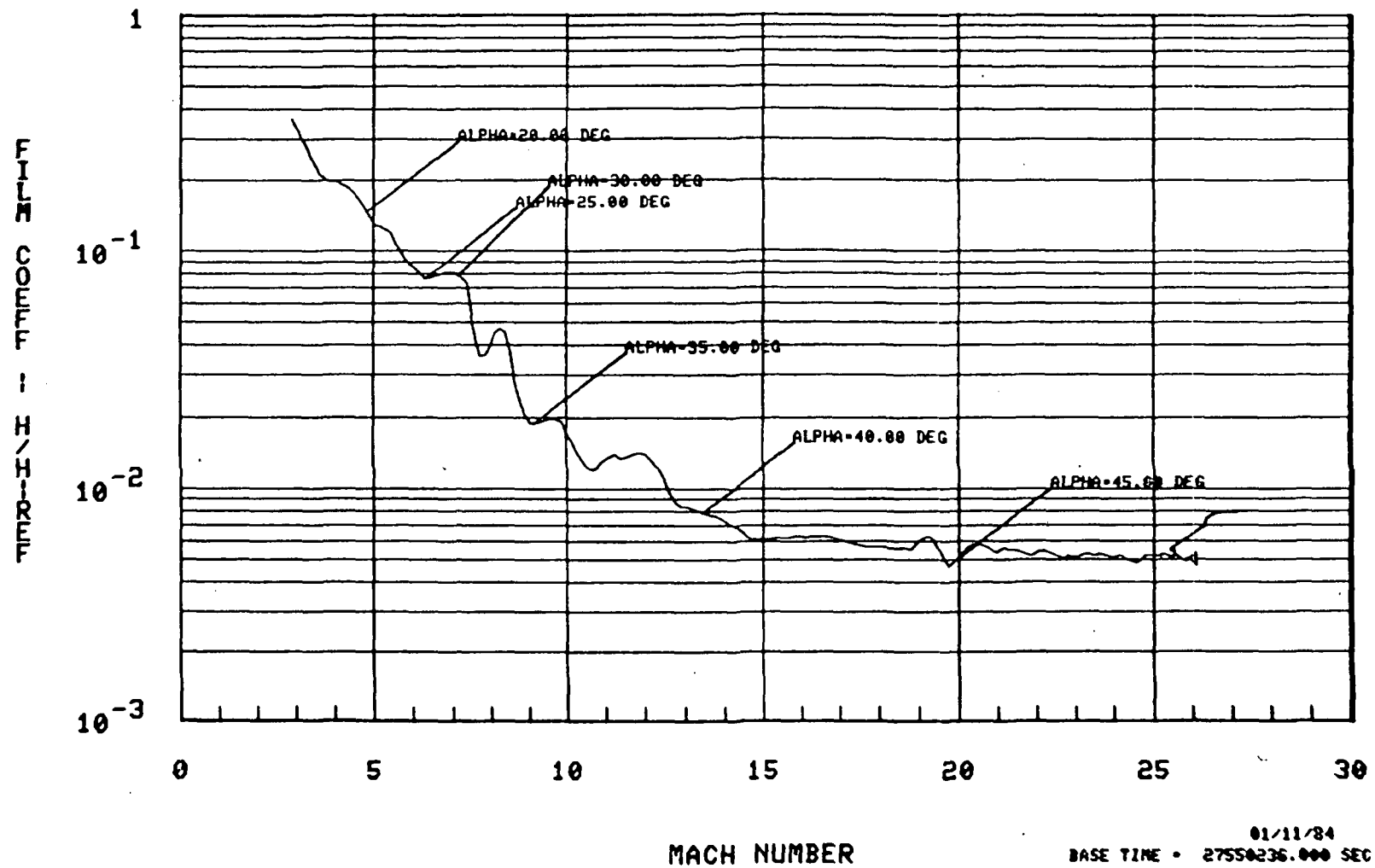
MACH NUMBER

01/11/84  
BASE TIME - 09049744.000 SEC.



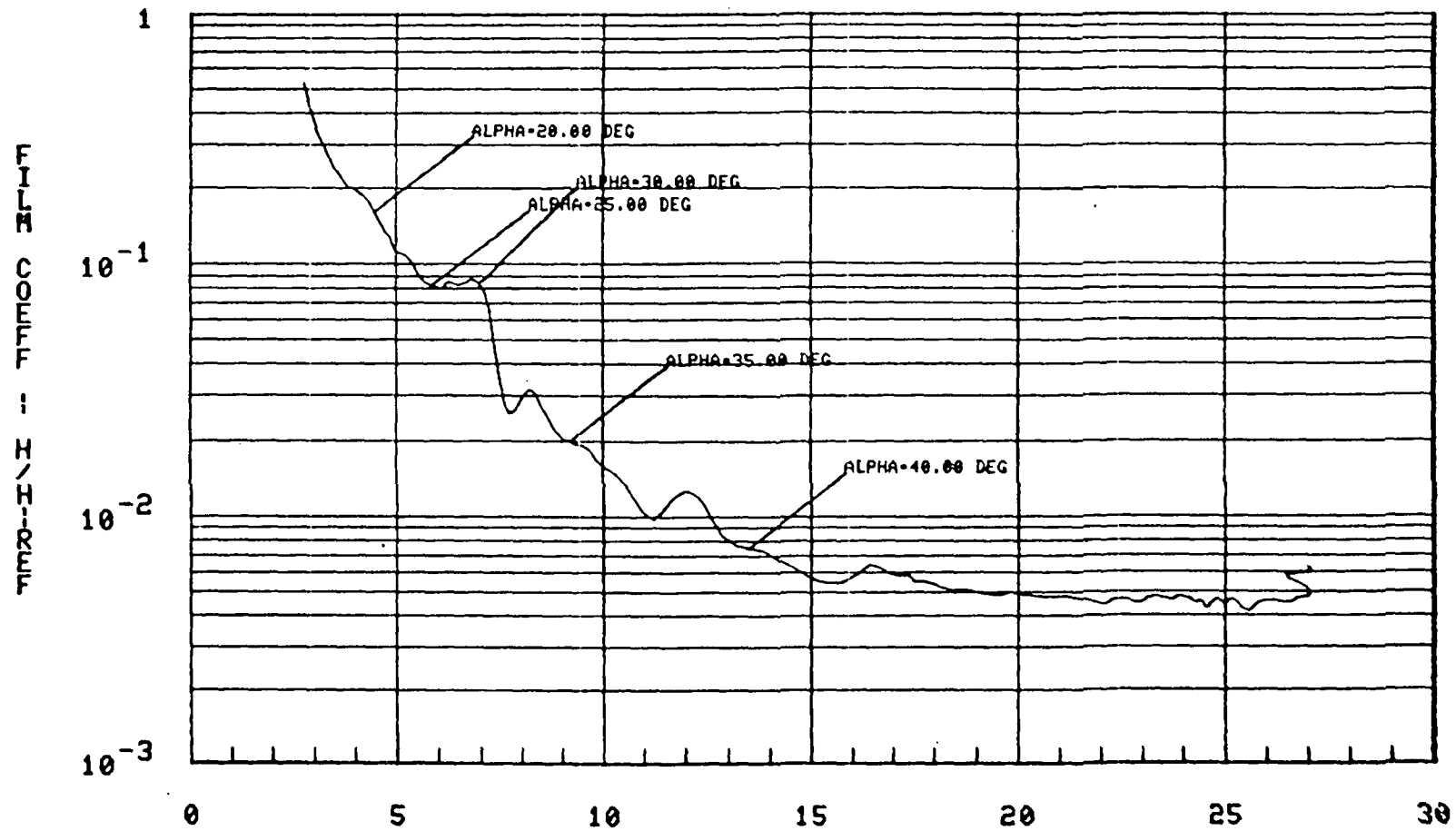
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

U07T9903A/H-REF, 200-1530 SEC



STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

U07T9903A/H-REF 200-1440 SEC

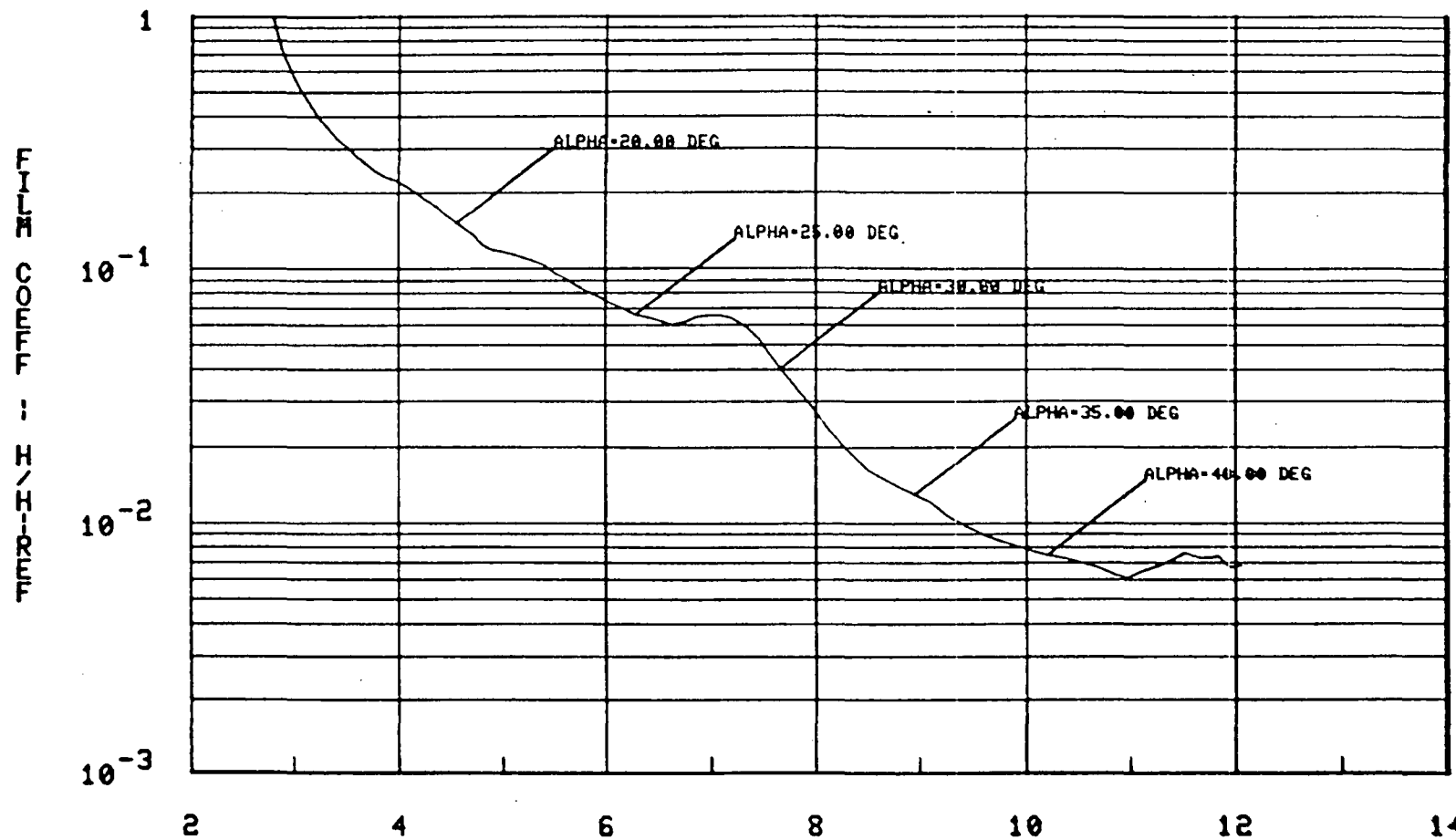


MACH NUMBER

01/11/84  
BASE TIME = 07745634.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

U07T9903A/H-REF 565-1360 SEC

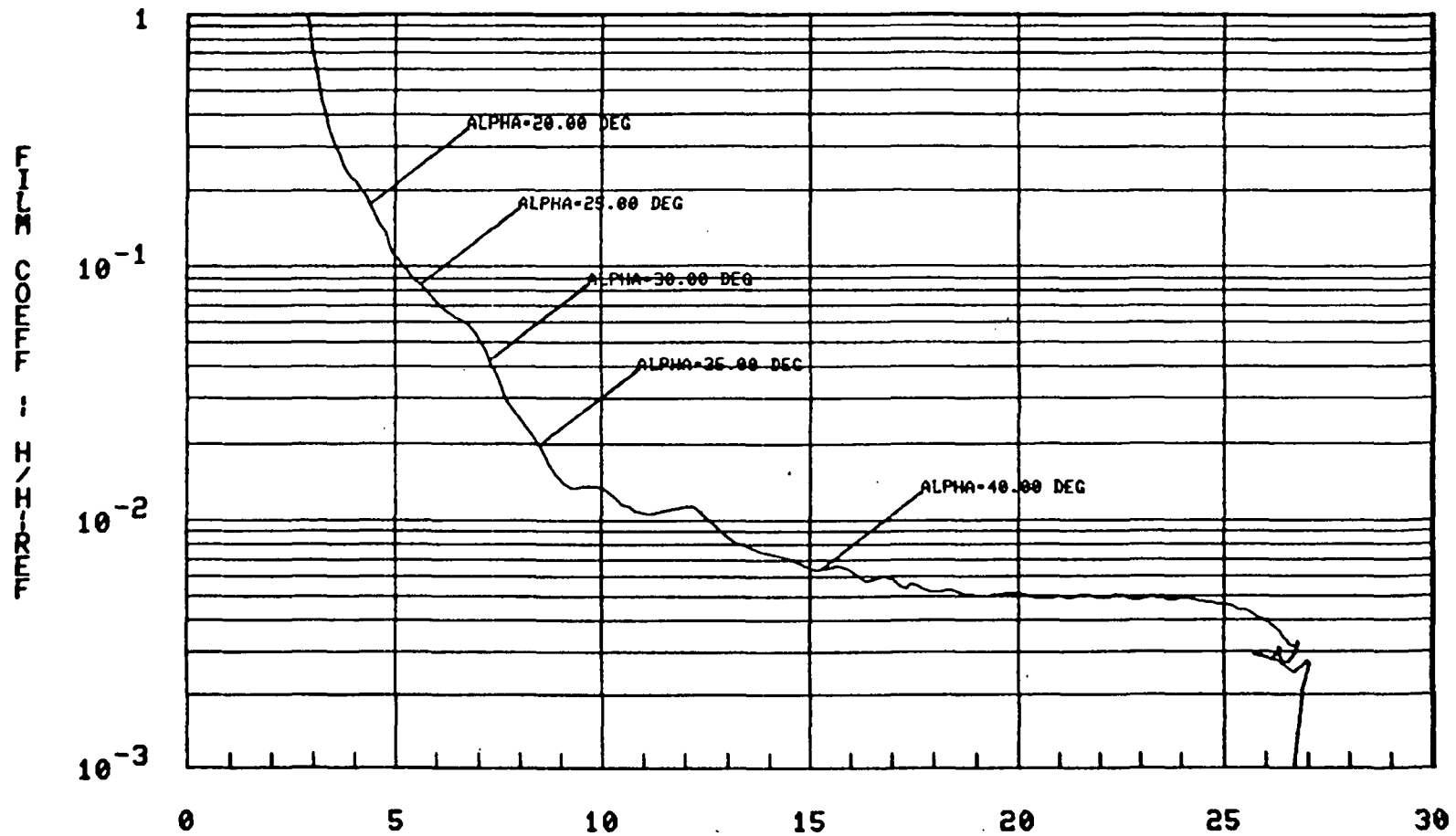


MACH NUMBER

01/12/84  
BASE TIME = 16040423.000 SEC.

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

U07T9903A/H-REF 150-1430 SEC



01/12/84

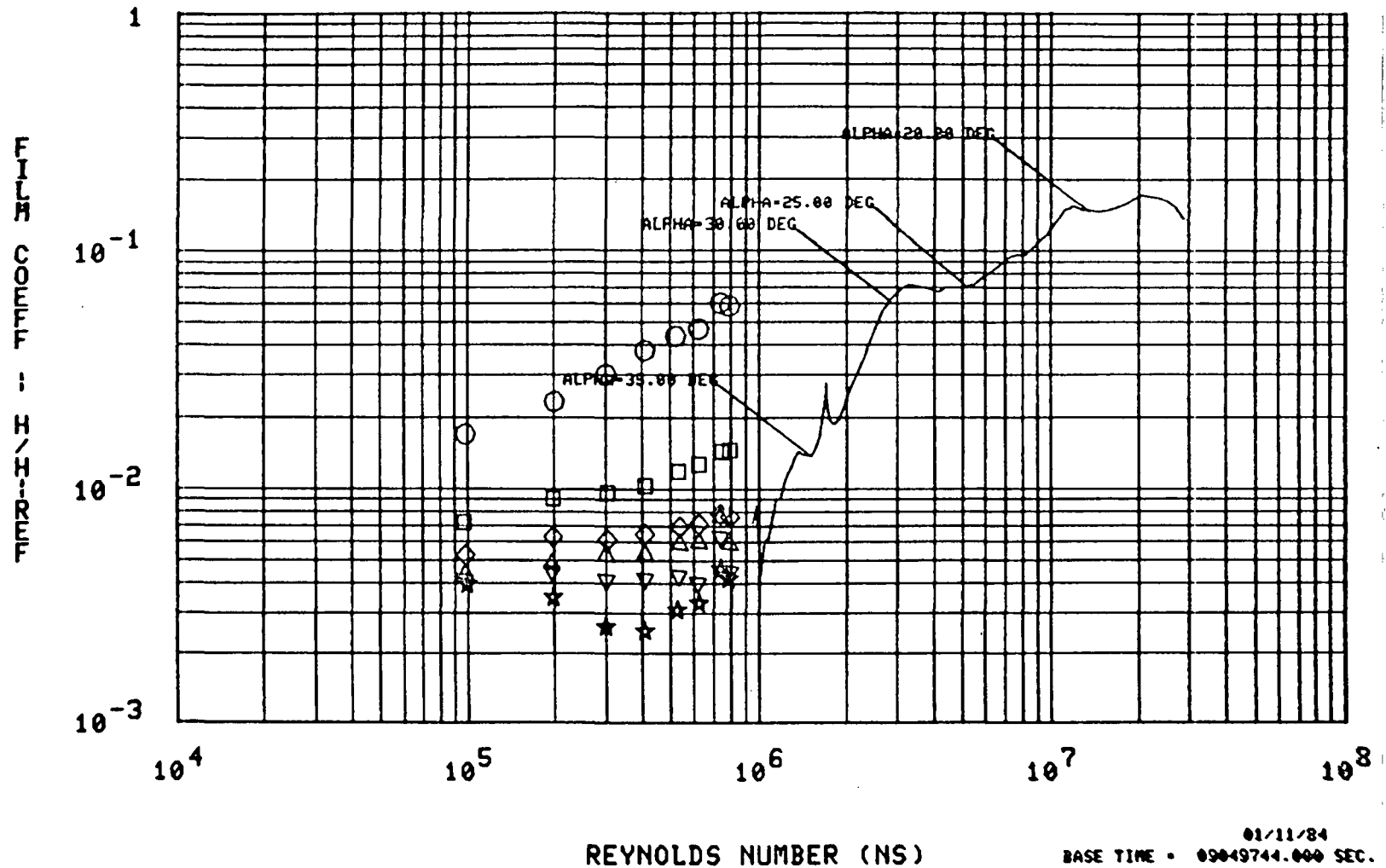
BASE TIME - 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9903A/H-REF 1065-1500 SEC

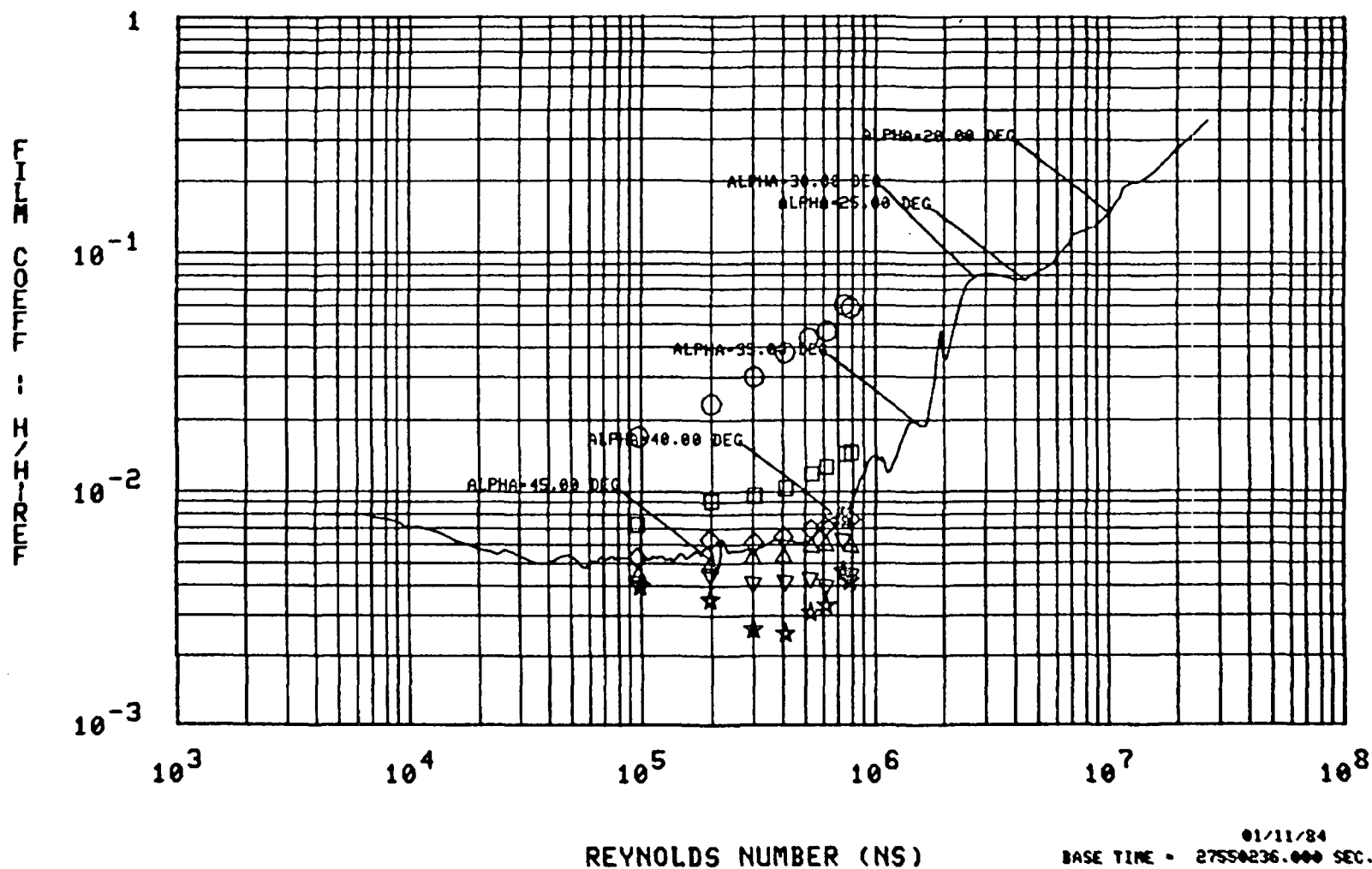


# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9903A/H-REF 200-1530 SEC

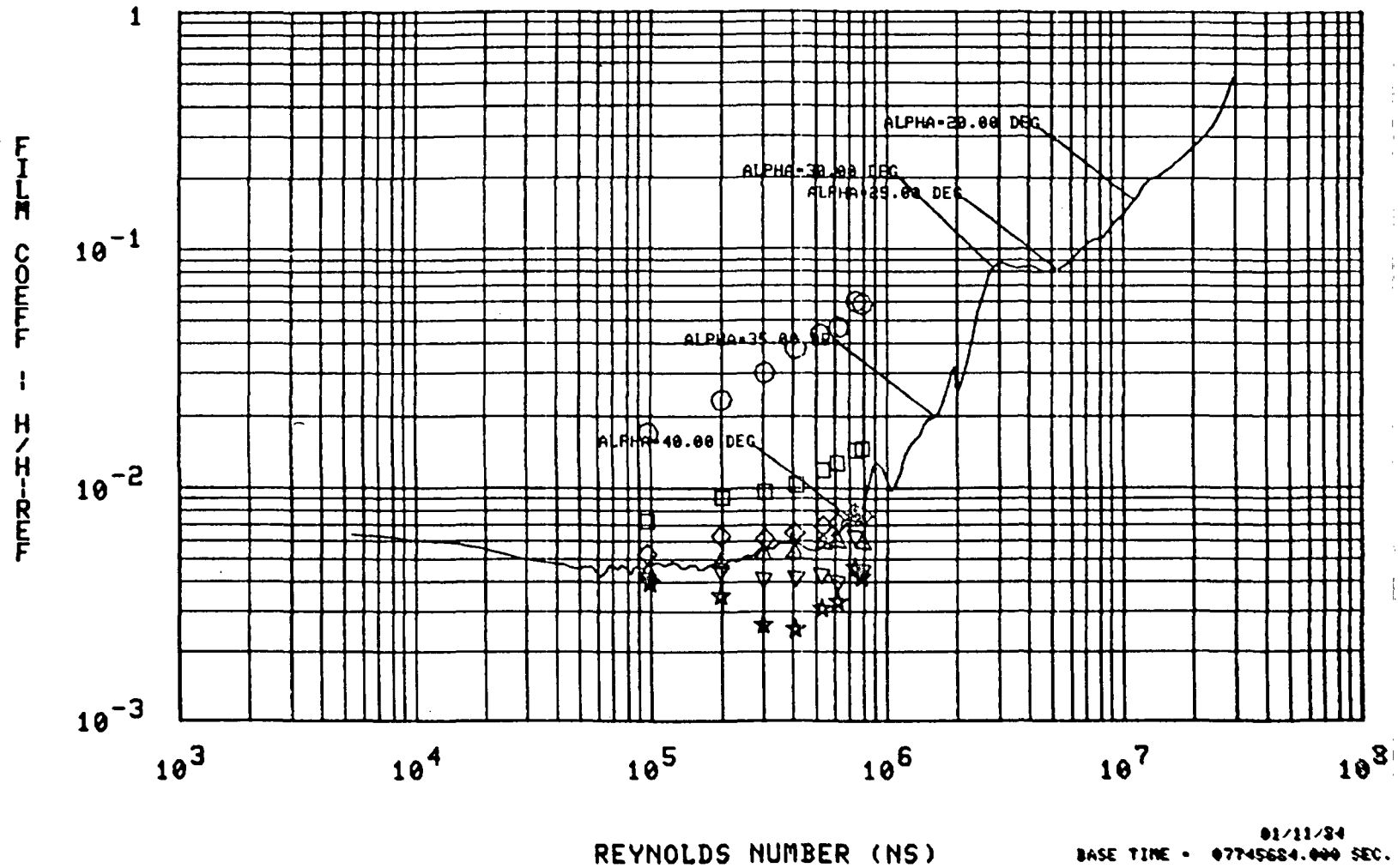


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9903A/H-REF 200-1440 SEC

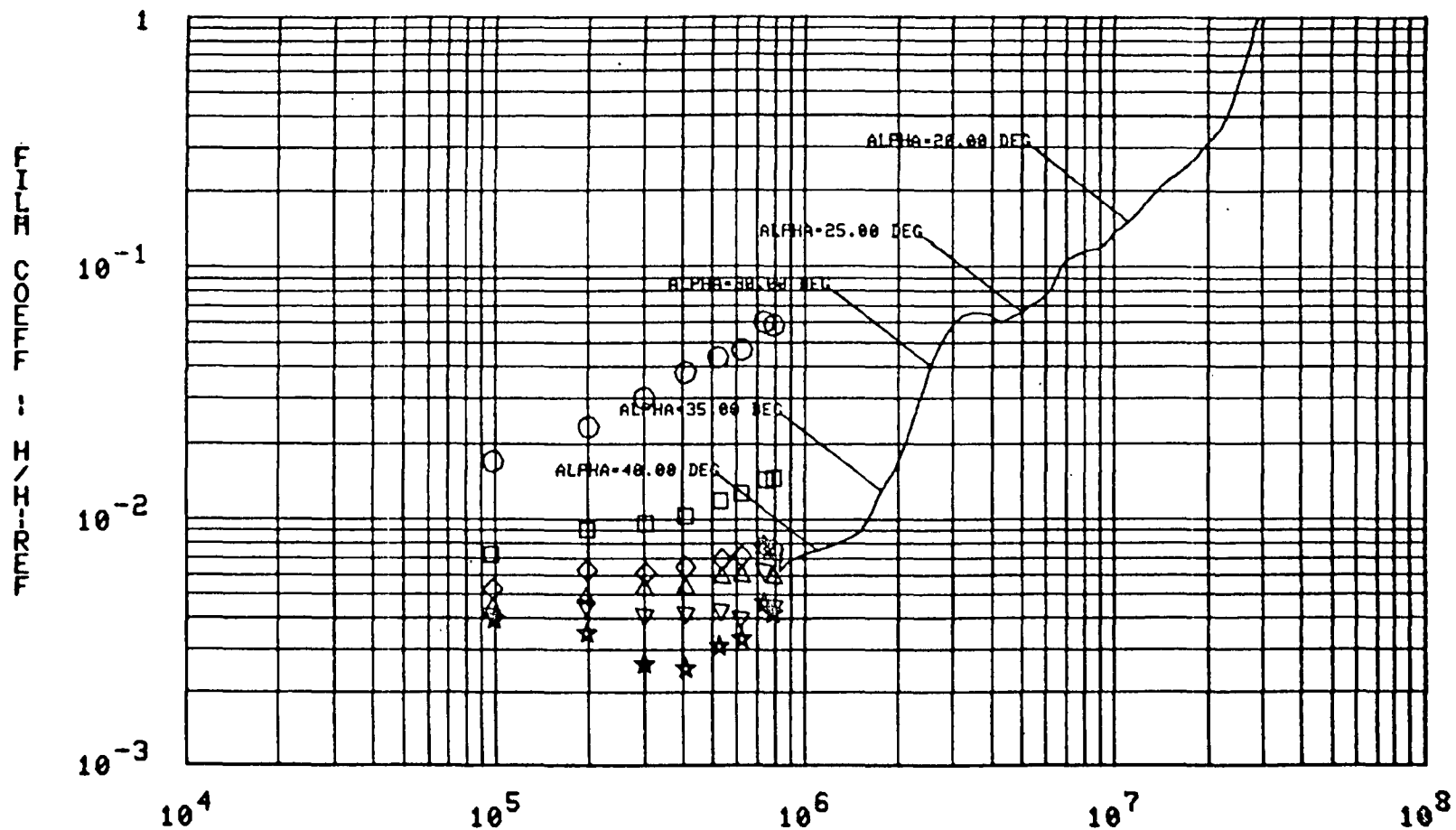


# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9903A/H-REF 965-1360 SEC



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REYNOLDS NUMBER (NS)

01/18/84  
BASE TIME • 16040423.000 SEC.

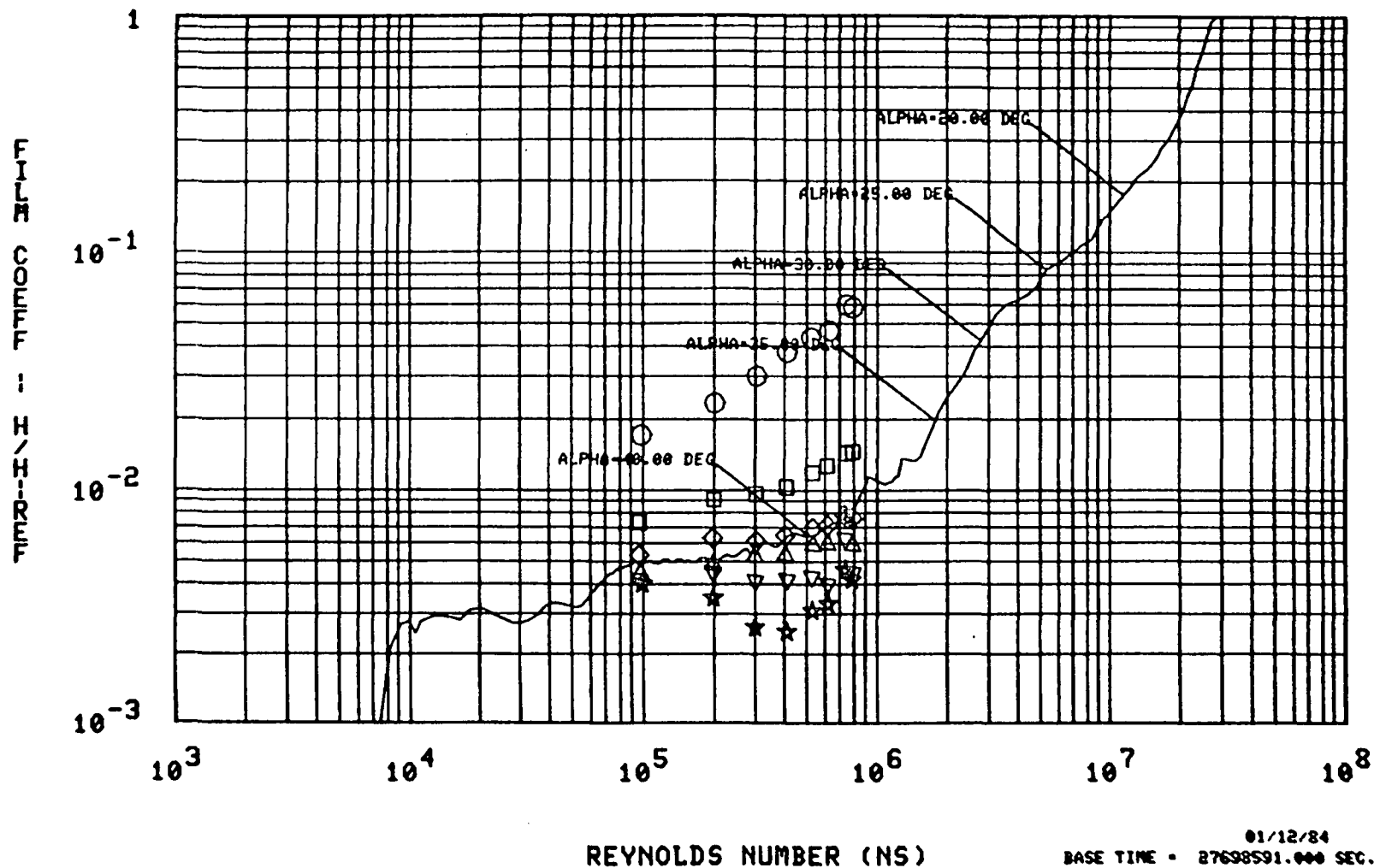


# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.60$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

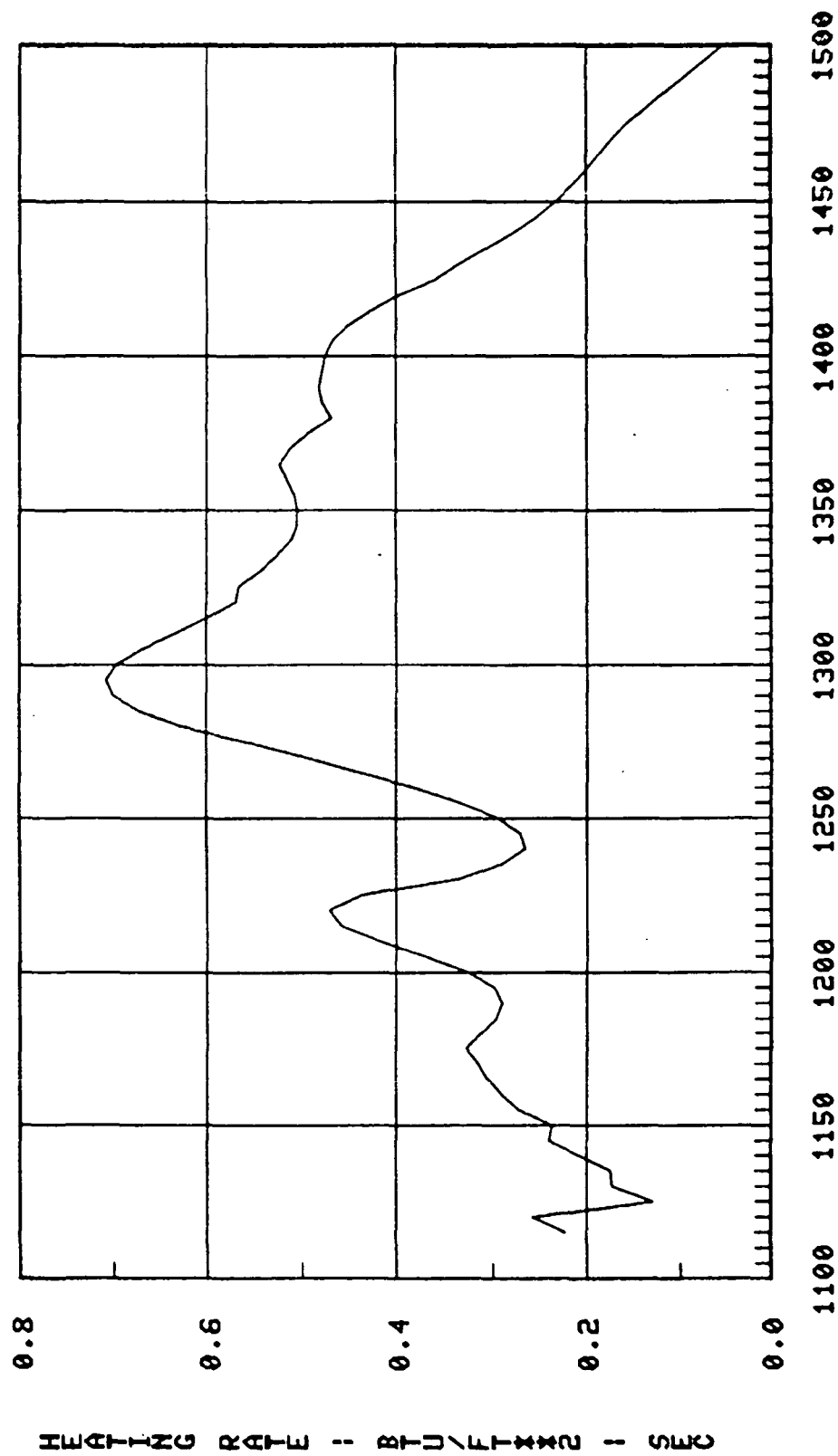
OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9903A/H-REF 150-1430 SEC



STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

U07T903A

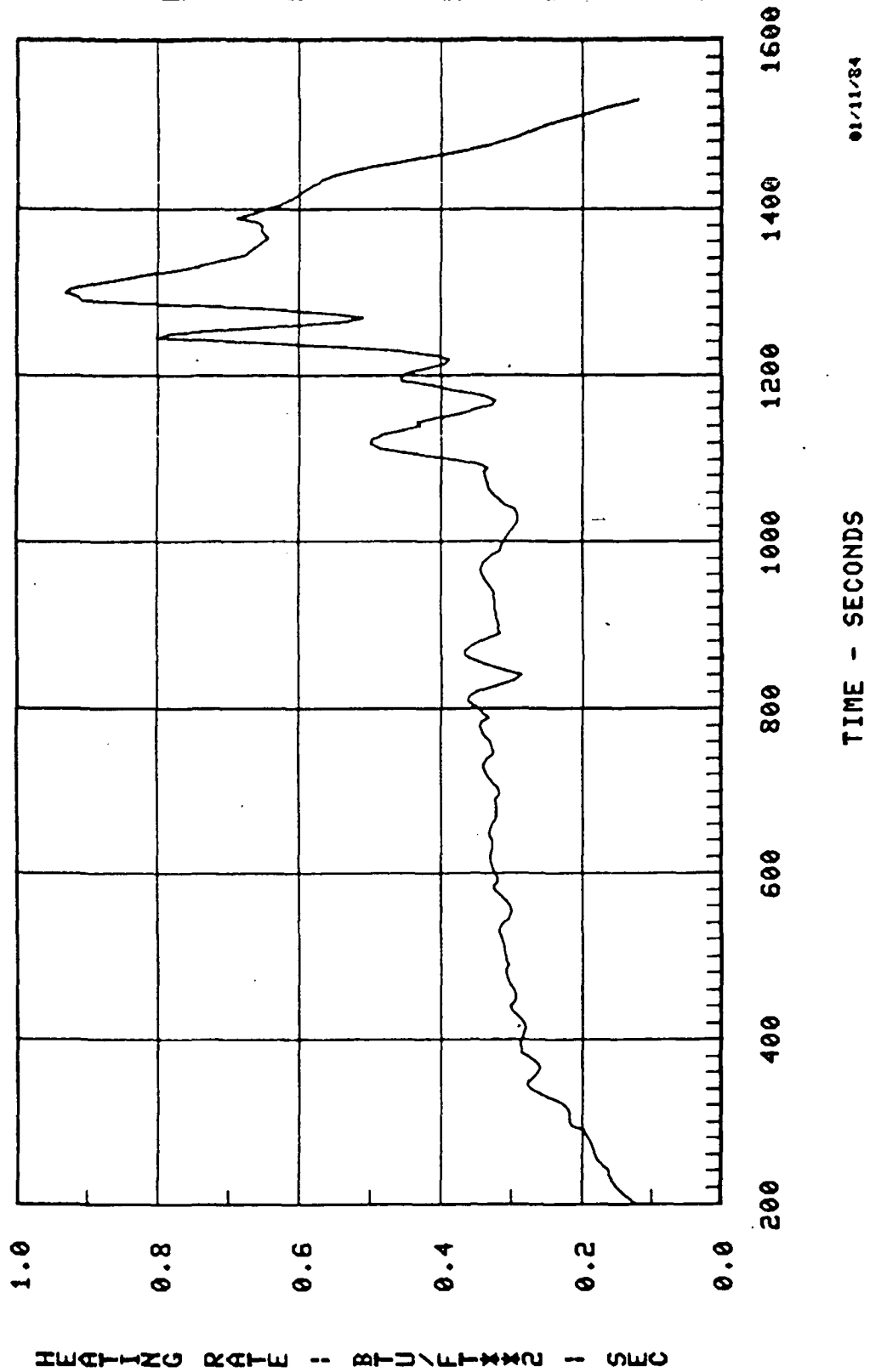


TIME - SECONDS

01/11/84

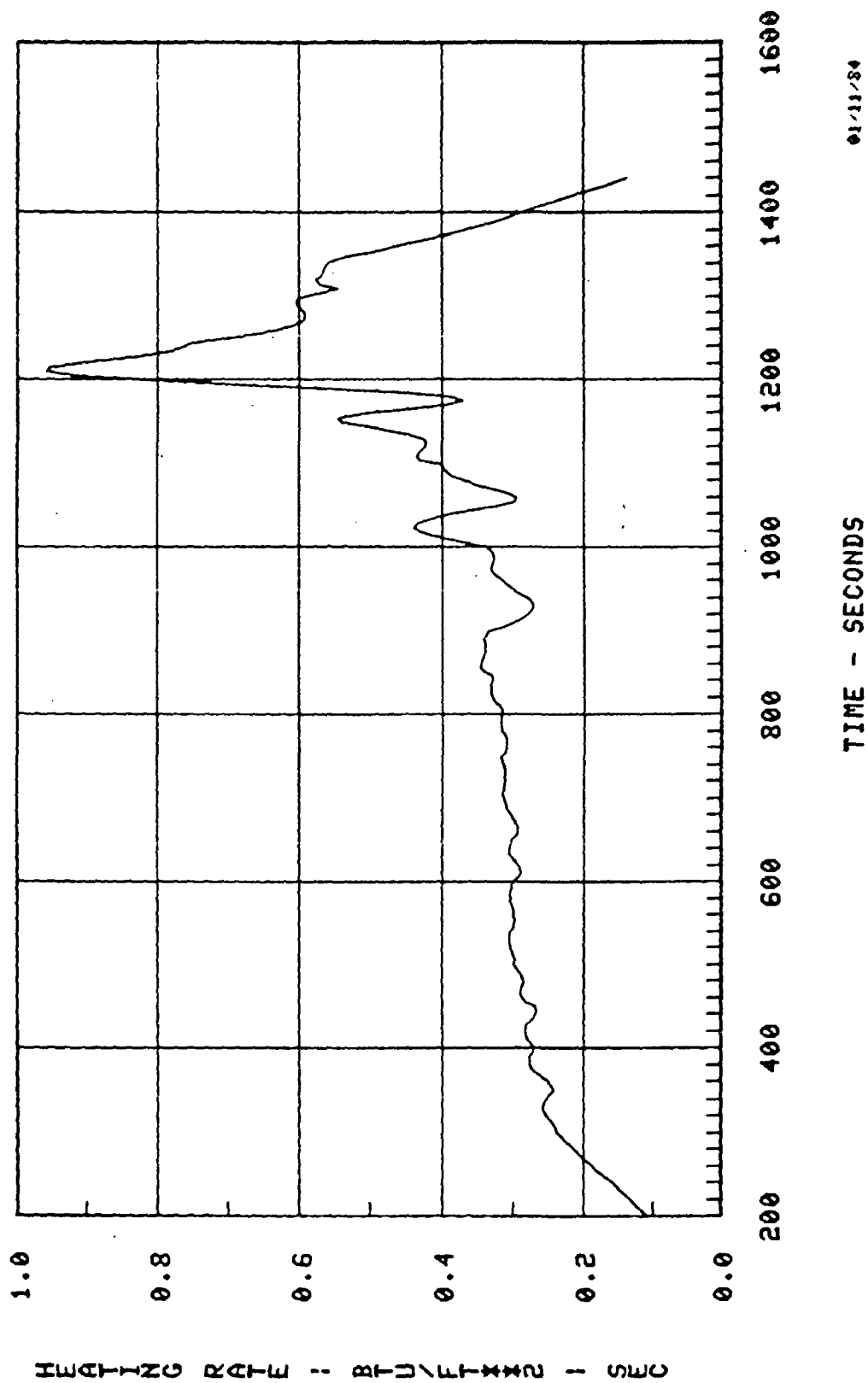
STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

U07T903A



STS-3 (107 FT LENGTH SIDE FUS X/L=0.60) Z=400

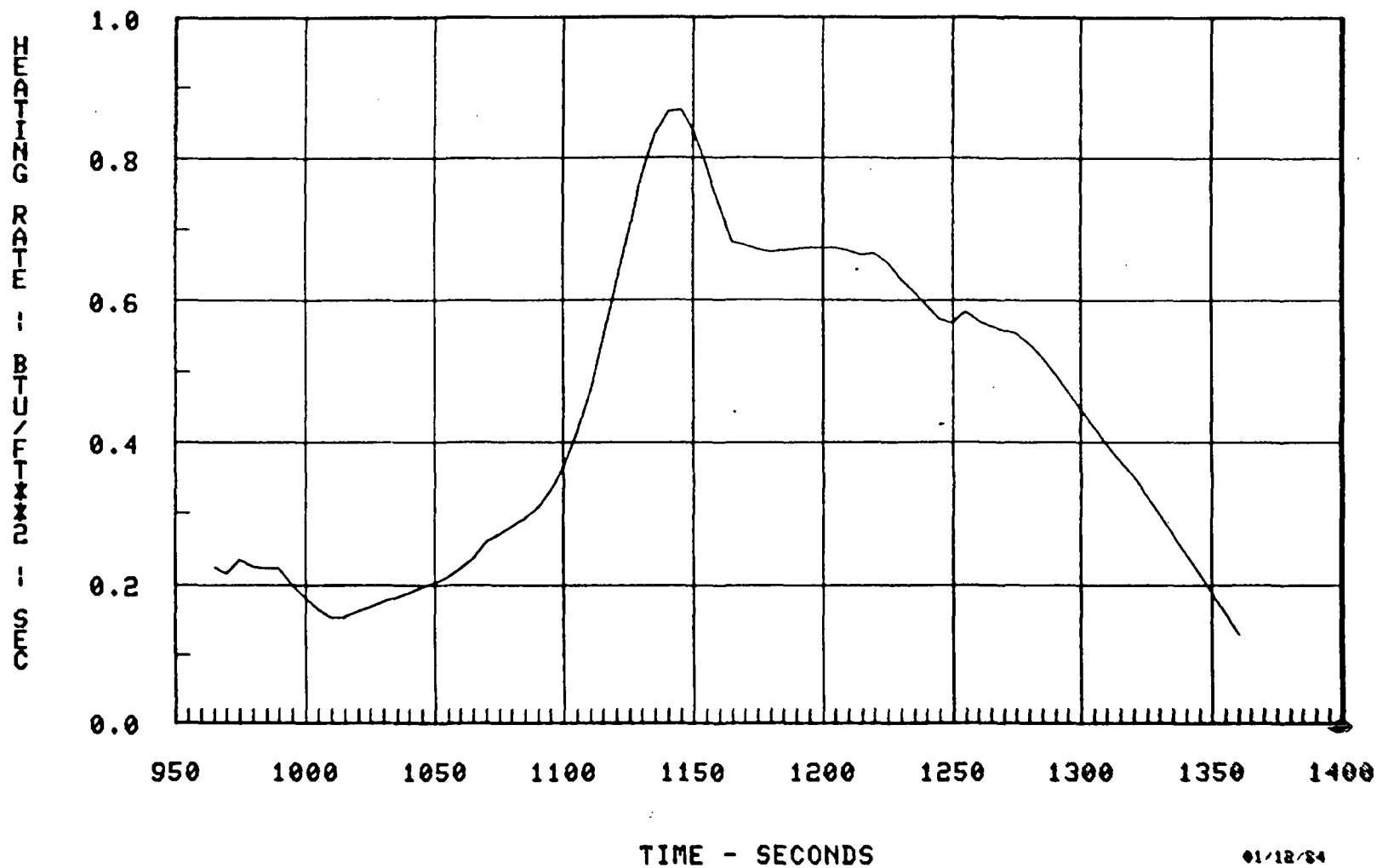
U07T903A



01/11/84

STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

U07T9903A



B-244

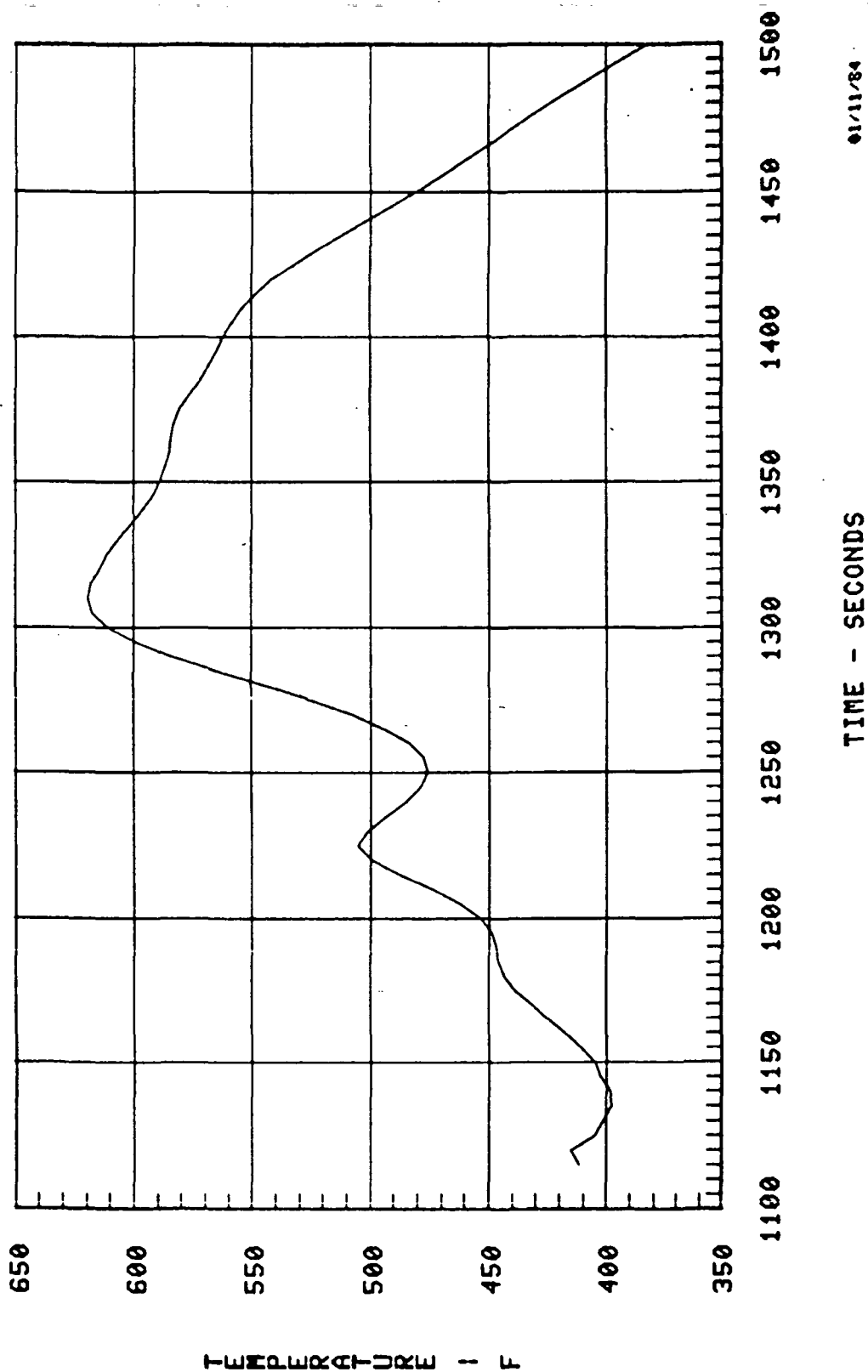
01/12/84

U07T9903A



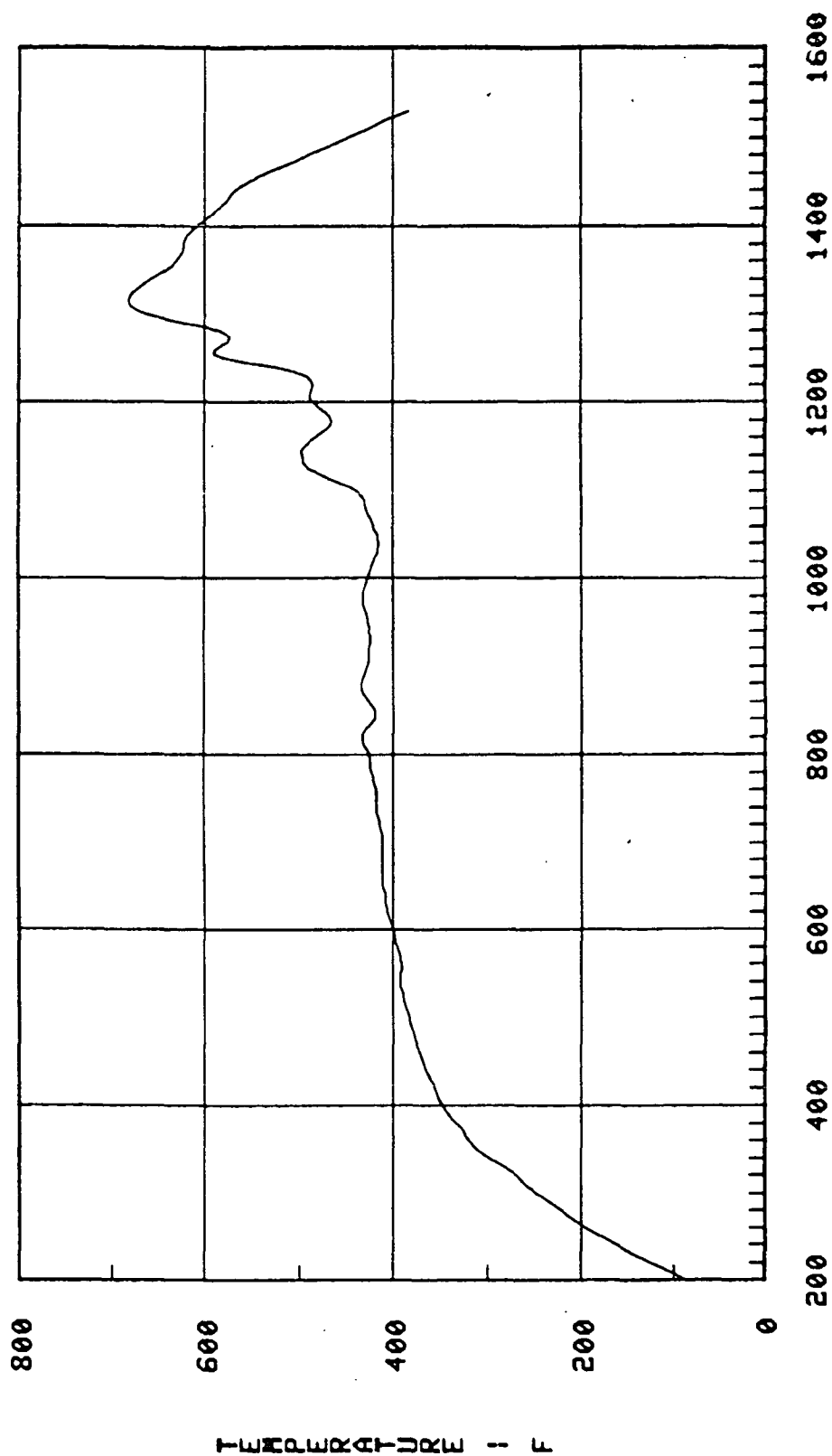
STS-1 (107 FT LENGTH SIDE FUS X/L=0.60) Z=400

U07T9903A



STS-2 (107 FT LENGTH SIDE FUS X/L=0.60) Z=400

U07T9903A

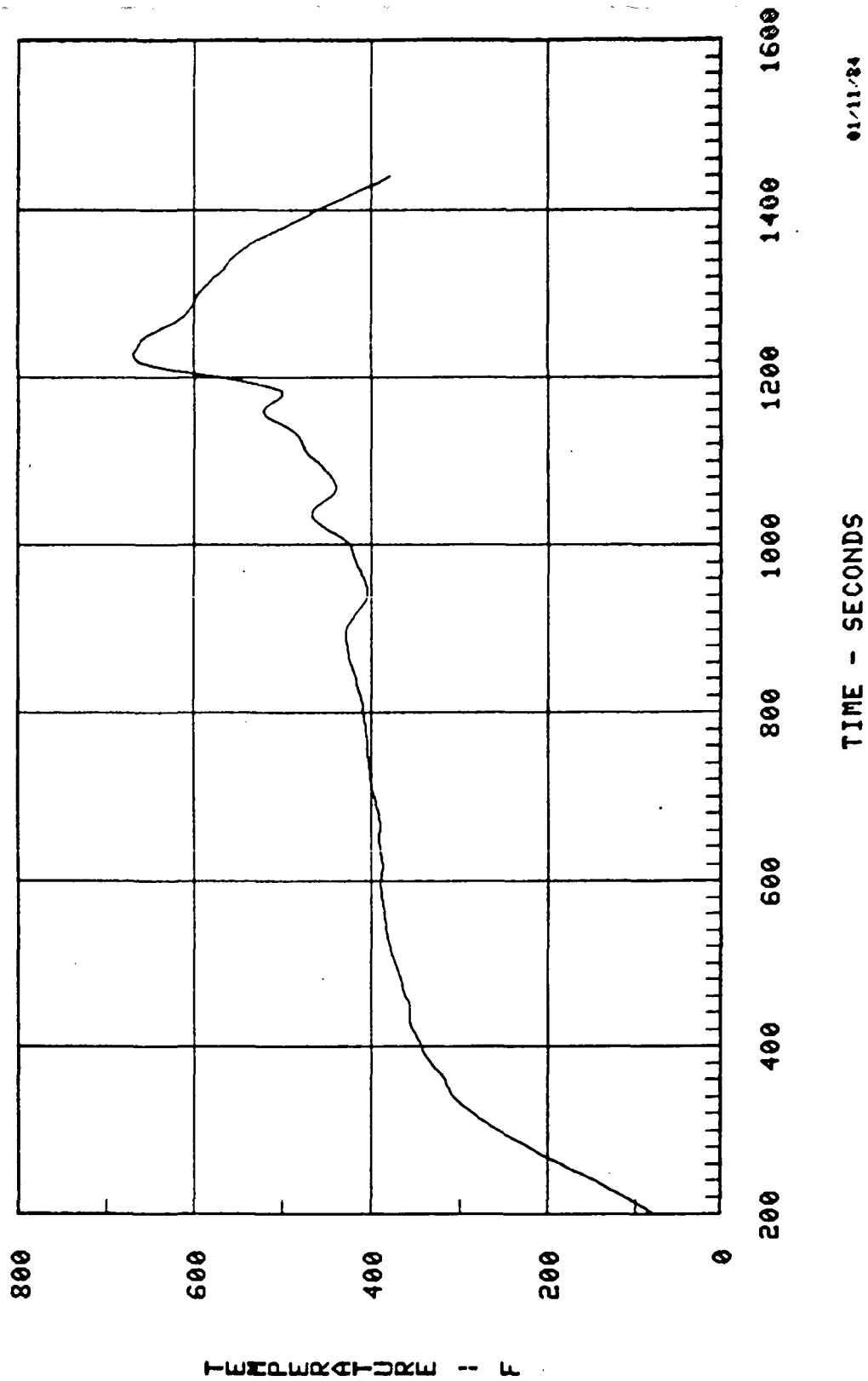


01/11/84



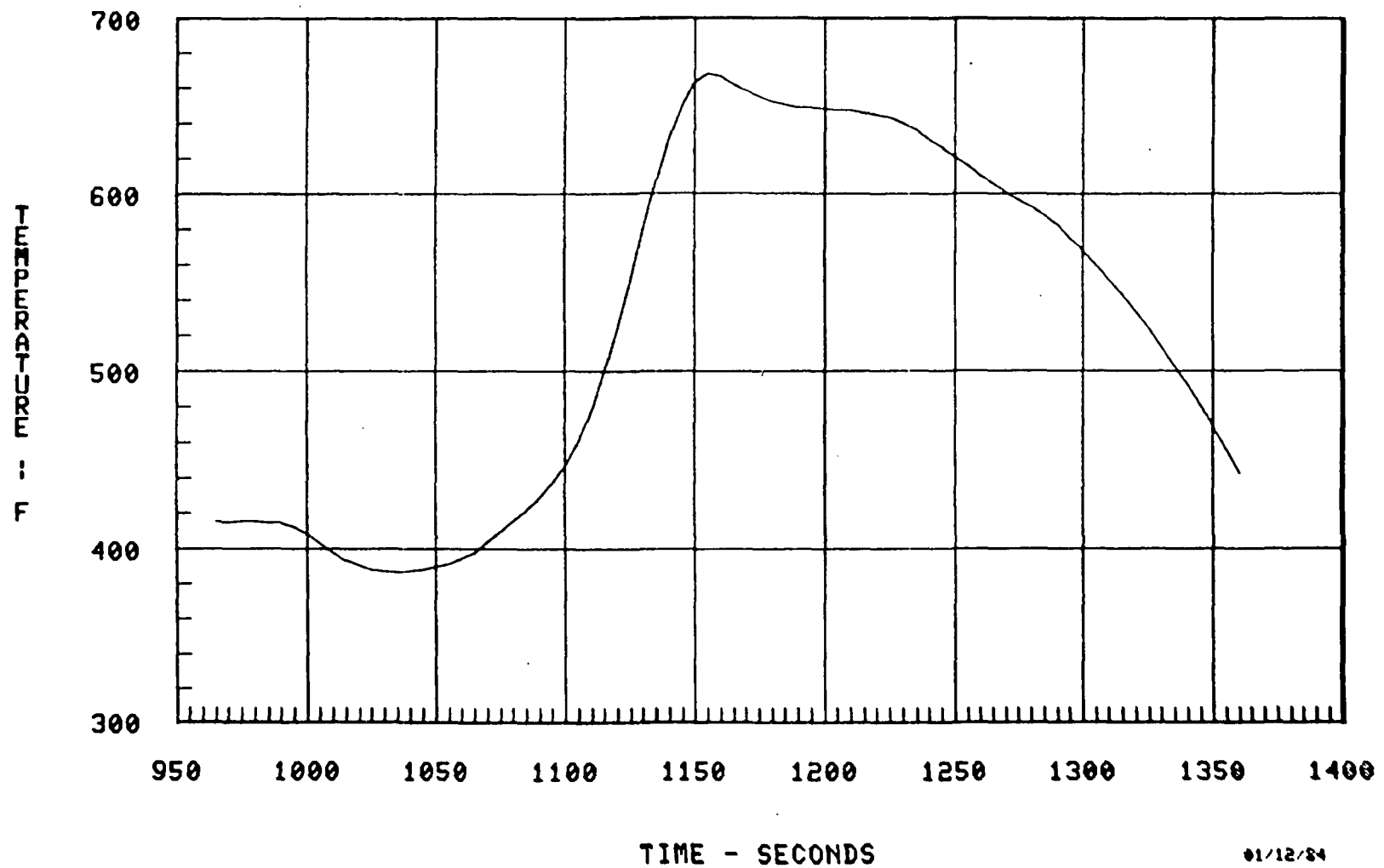
STS-3 (107 FT LENGTH SIDE FUS X/L=0.60) Z=400

U07T9903A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

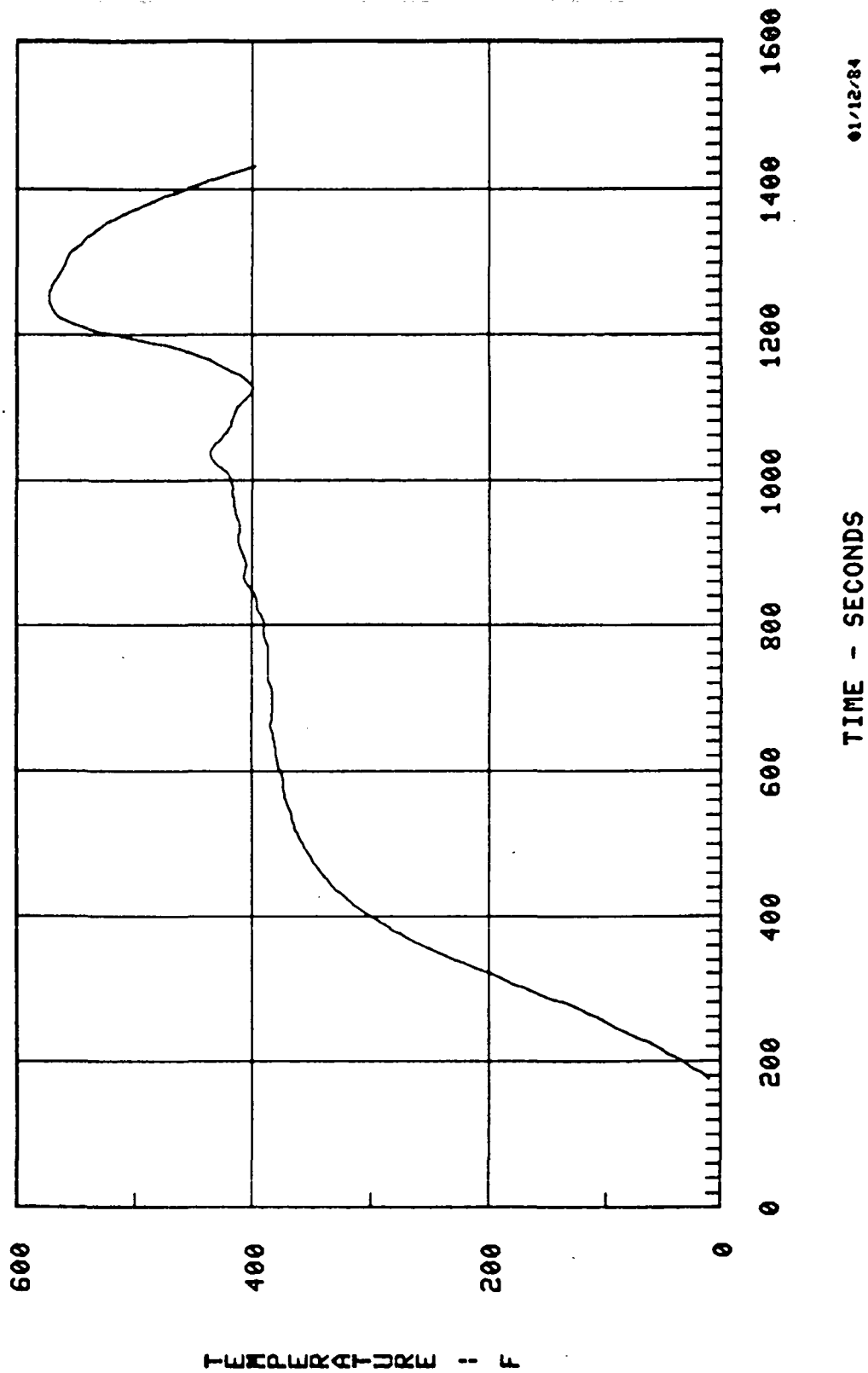
U07T9903A



01/12/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.60$ )  $Z=400$

U07T9903A



01/12/84

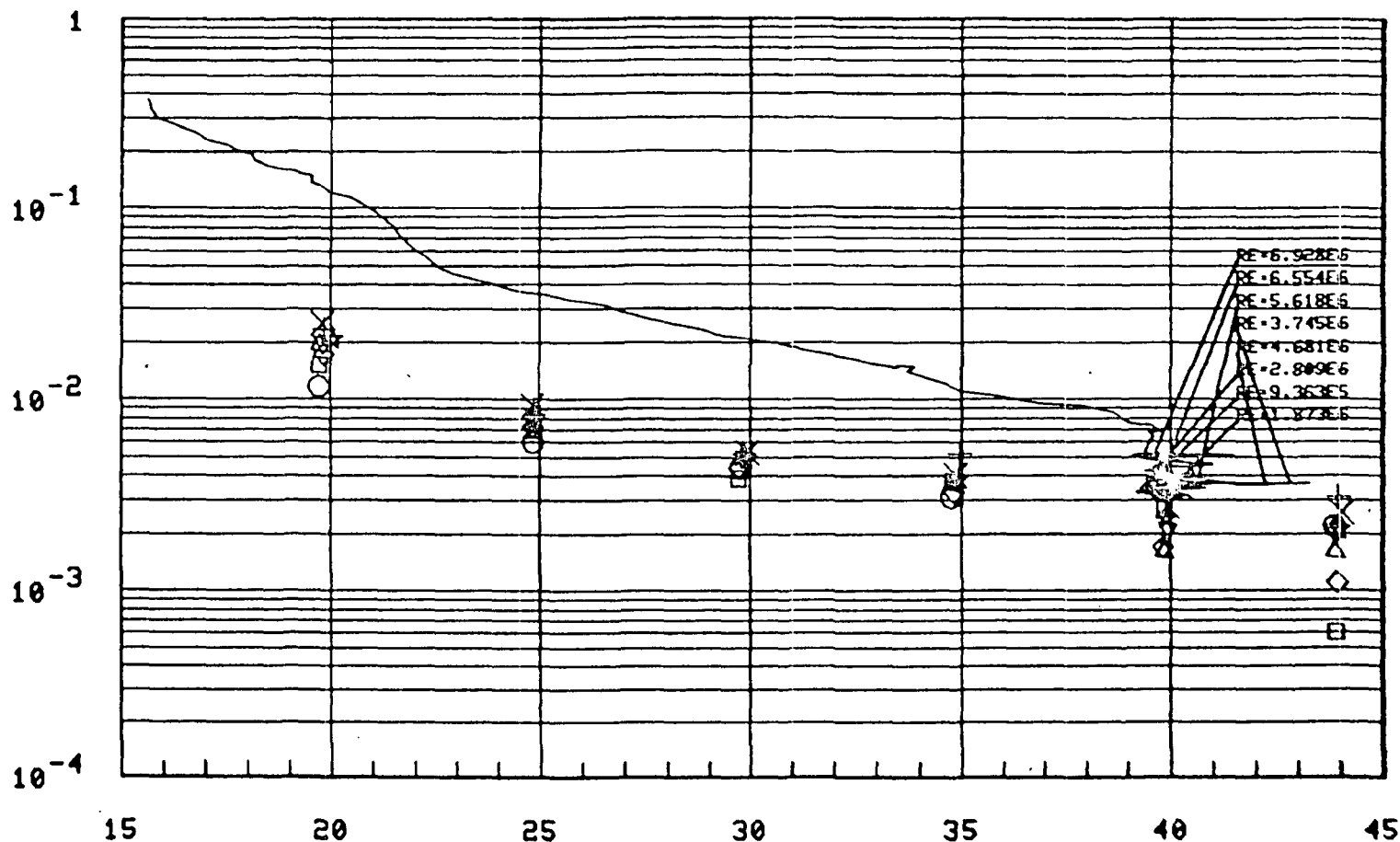
# STS-3 (107 FT LENGTH SIDE FUS X/L=0.65) Z=400

○  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9255A/H-REF 200-1440 SEC

FILE CODE - H/H-REF



B-251

ANGLE-OF-ATTACK - DEG

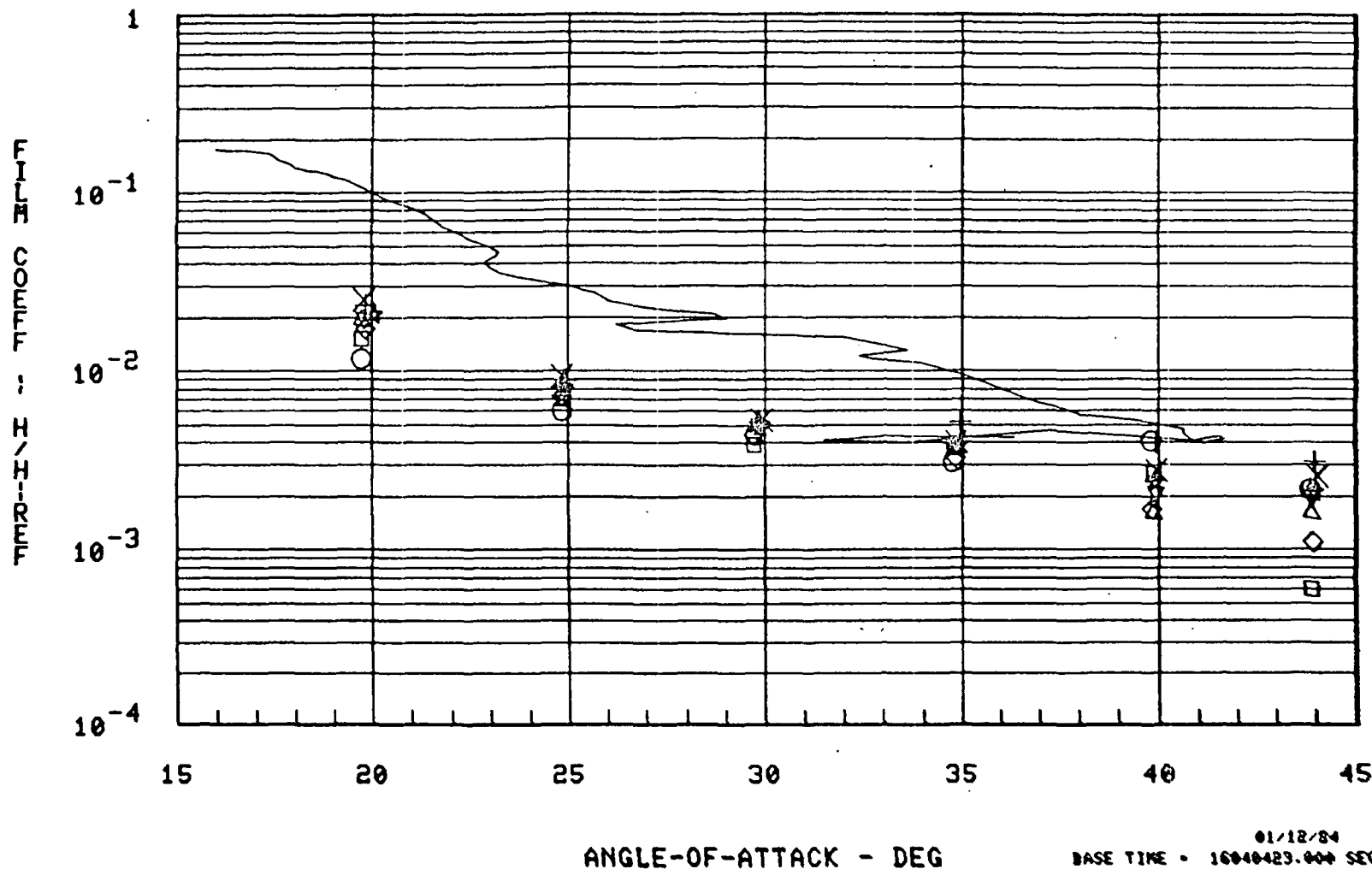
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS X/L=0.65) Z=400

○  
□  
△  
▽  
+  
\*  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9255A/H-REF 965-1360 SEC

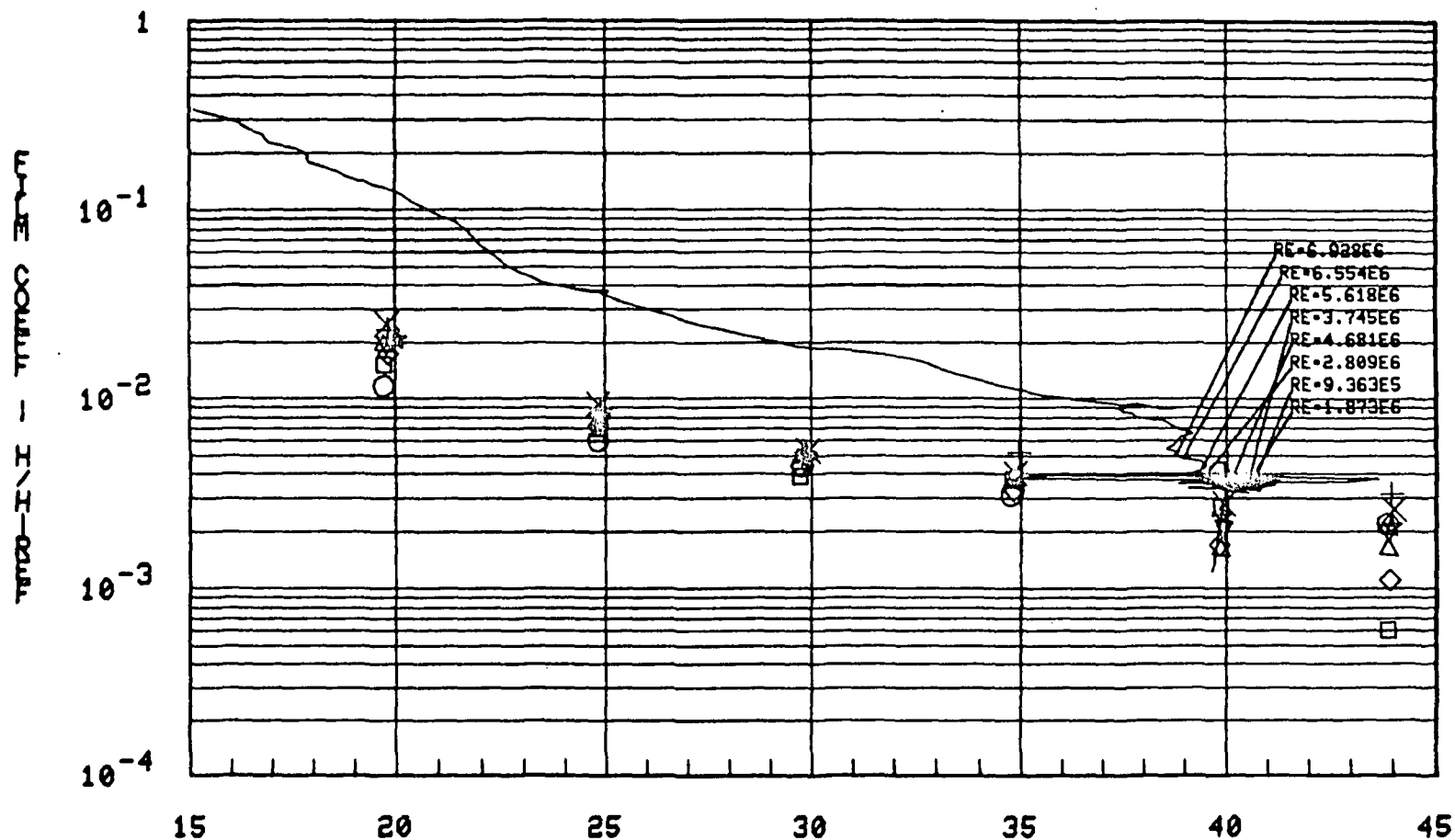


# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.65$ ) $Z=400$

○  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9255A/H-REF 150-1430 SEC



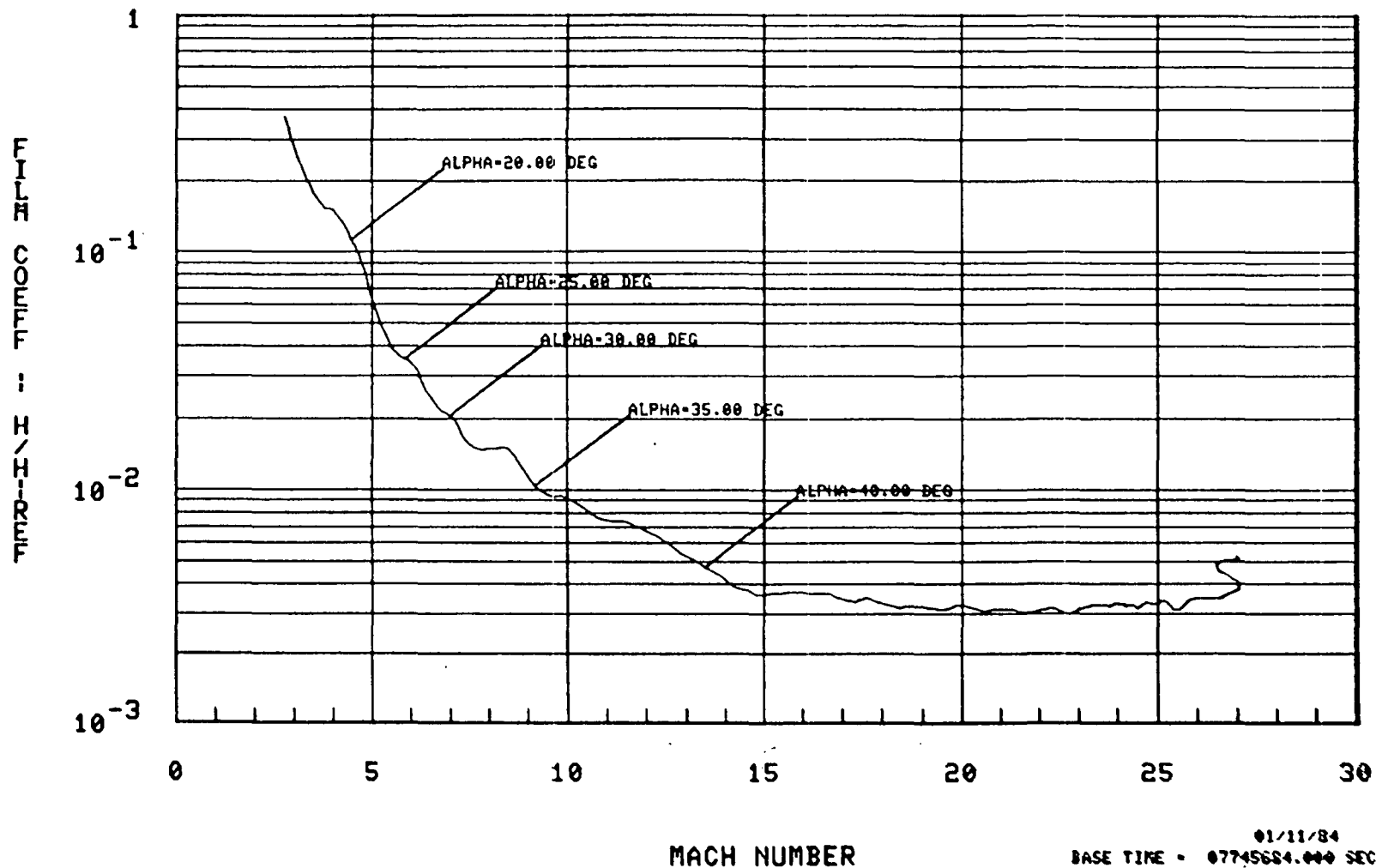
B-253

01/18/84

BASE TIME = 27698591.000 SEC.

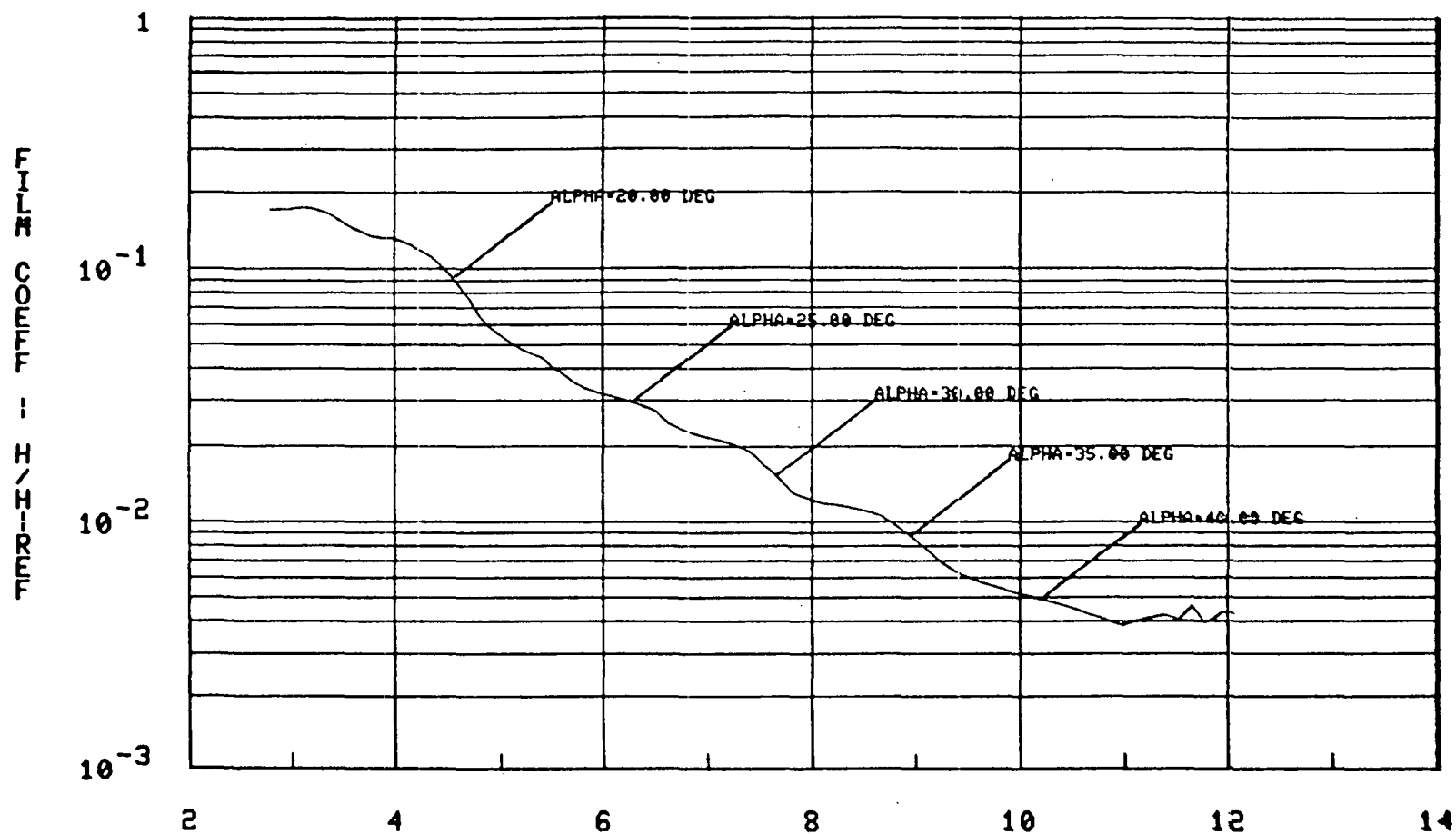
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.65$ ) $Z=400$

U07T9255A/H-REF 200-1440 SEC



# STS-4 (107 FT LENGTH SIDE FUS X/L=0.65) Z=400

U07T9255A/H-REF 965-1360 SEC



B-255

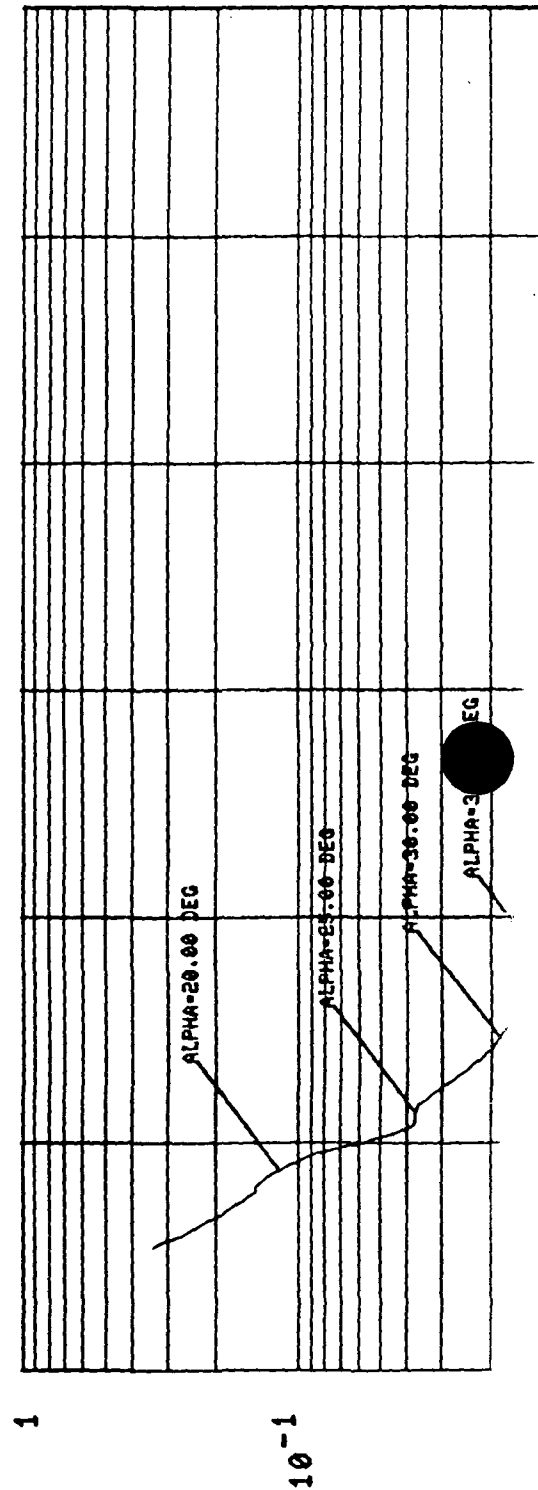
MACH NUMBER

01/12/84  
BASE TIME = 16040423.000 SEC.



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.65$ )  $Z=400$

U07T9255A/H-REF 150-1430 SEC

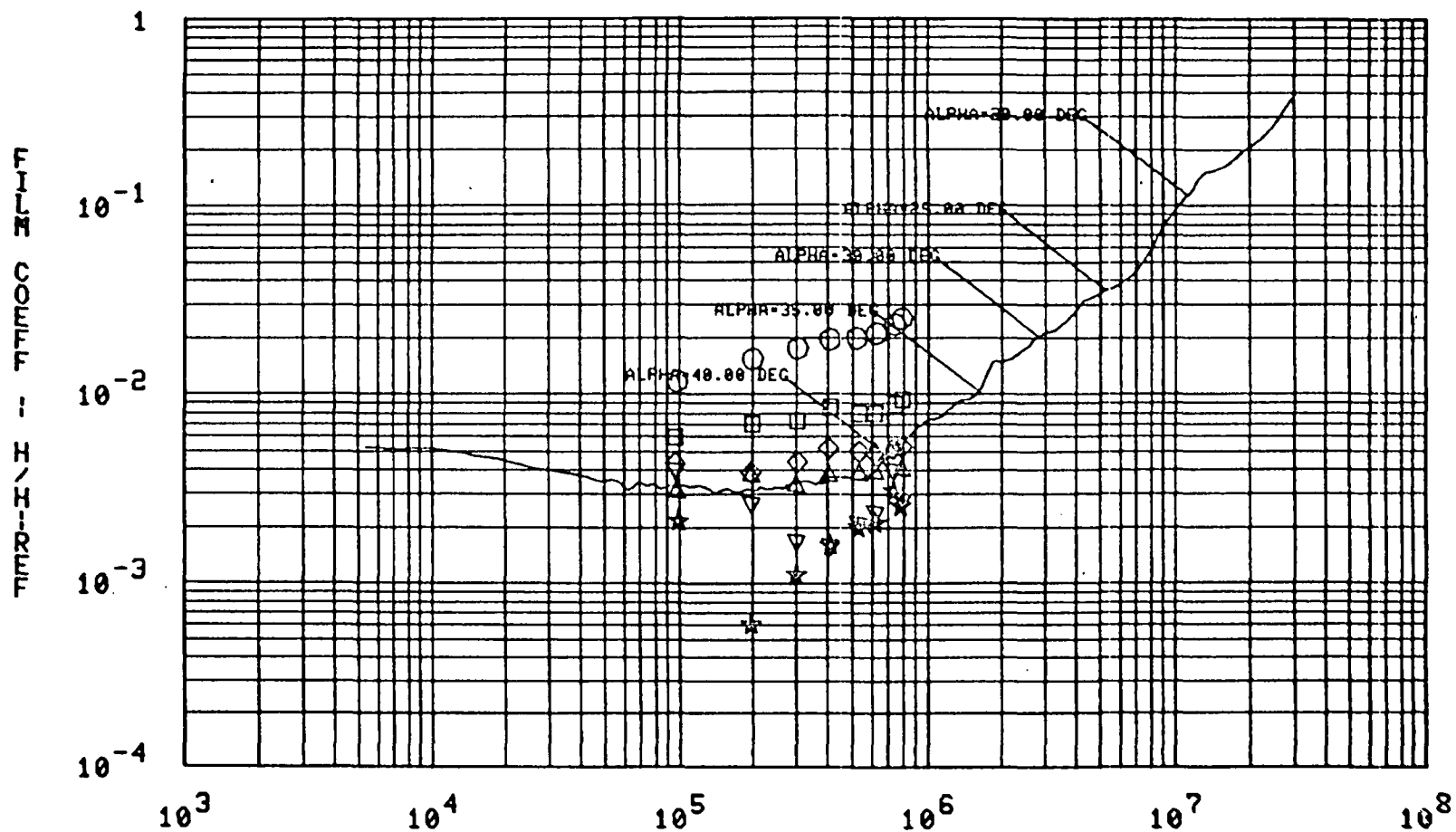


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.65$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9255A/H-REF 200-1440 SEC



REYNOLDS NUMBER (NS)

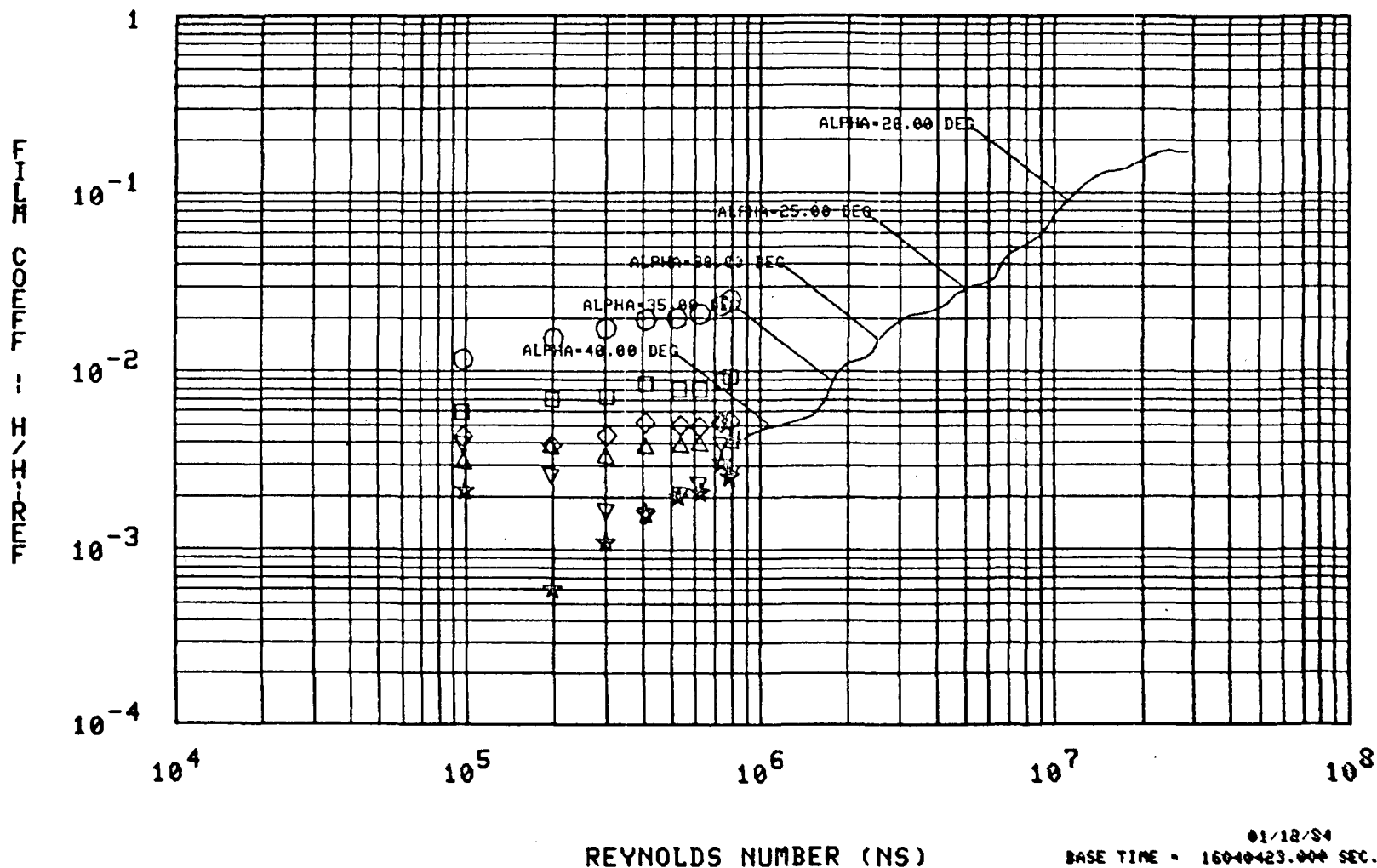
01/11/84  
BASE TIME = 07745654.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.65$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9255A/H-REF 965-1360 SEC

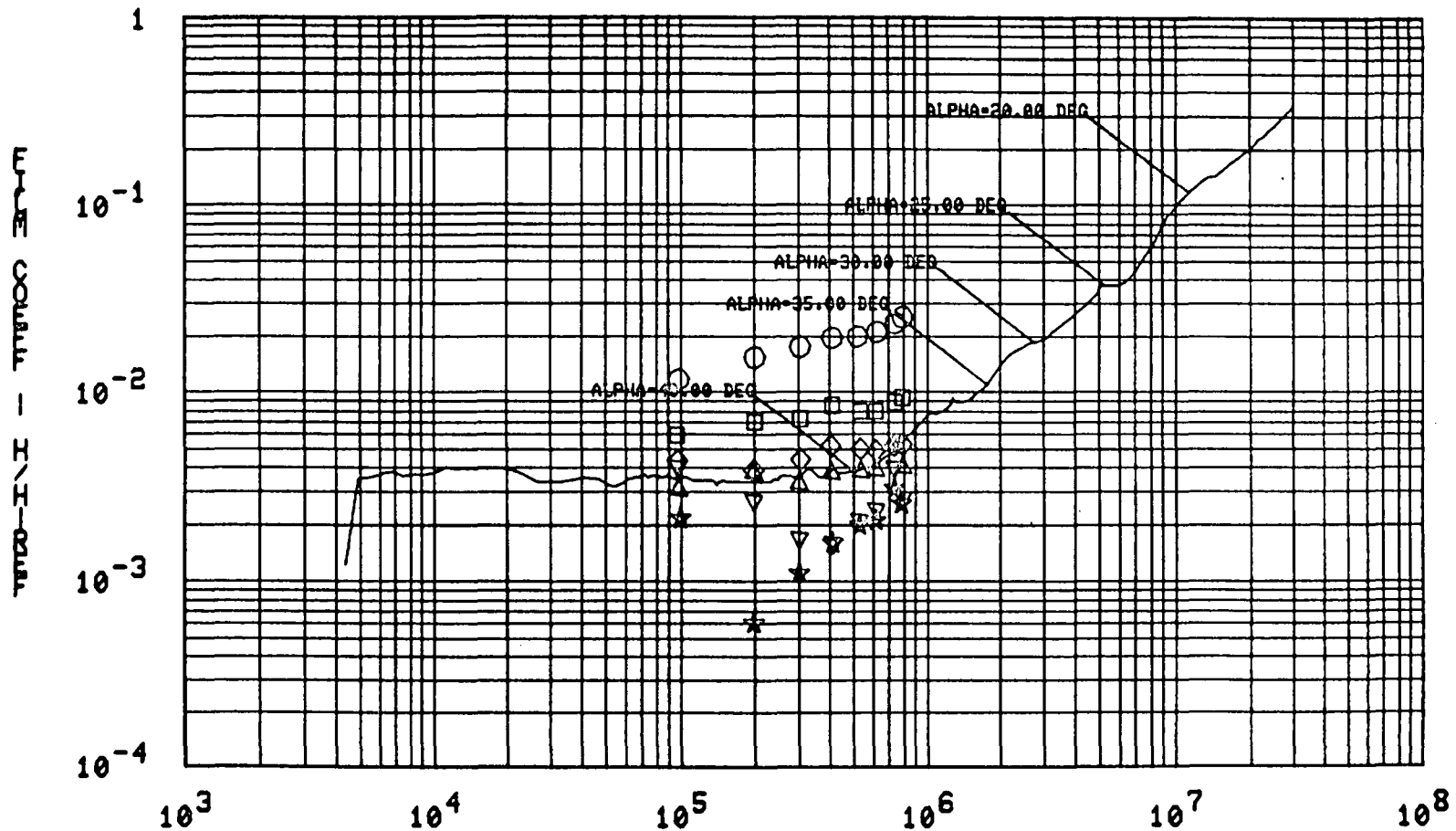


# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.65$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9255A/H-REF 150-1430 SEC



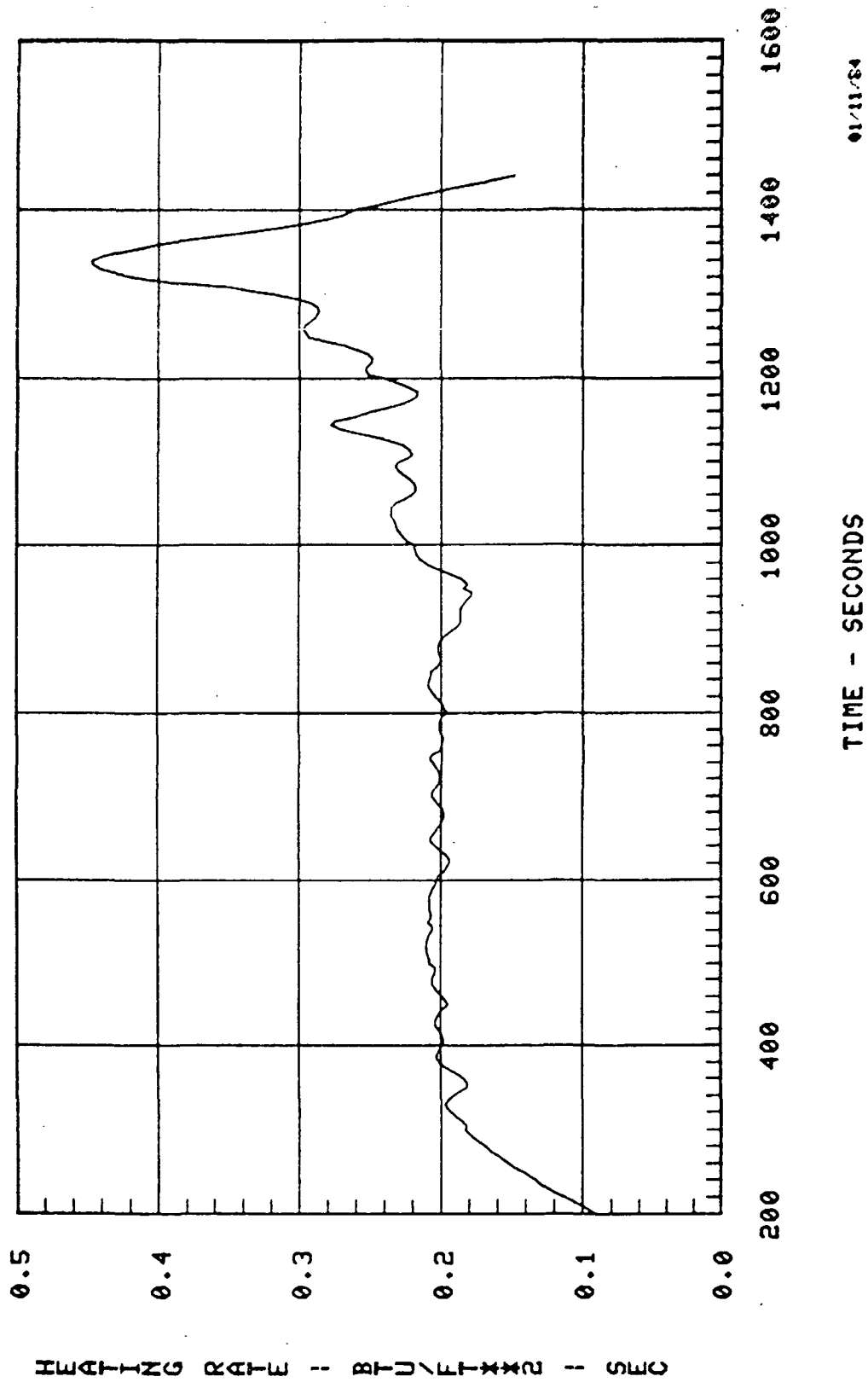
B-259

REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME • 27698591.000 SEC.

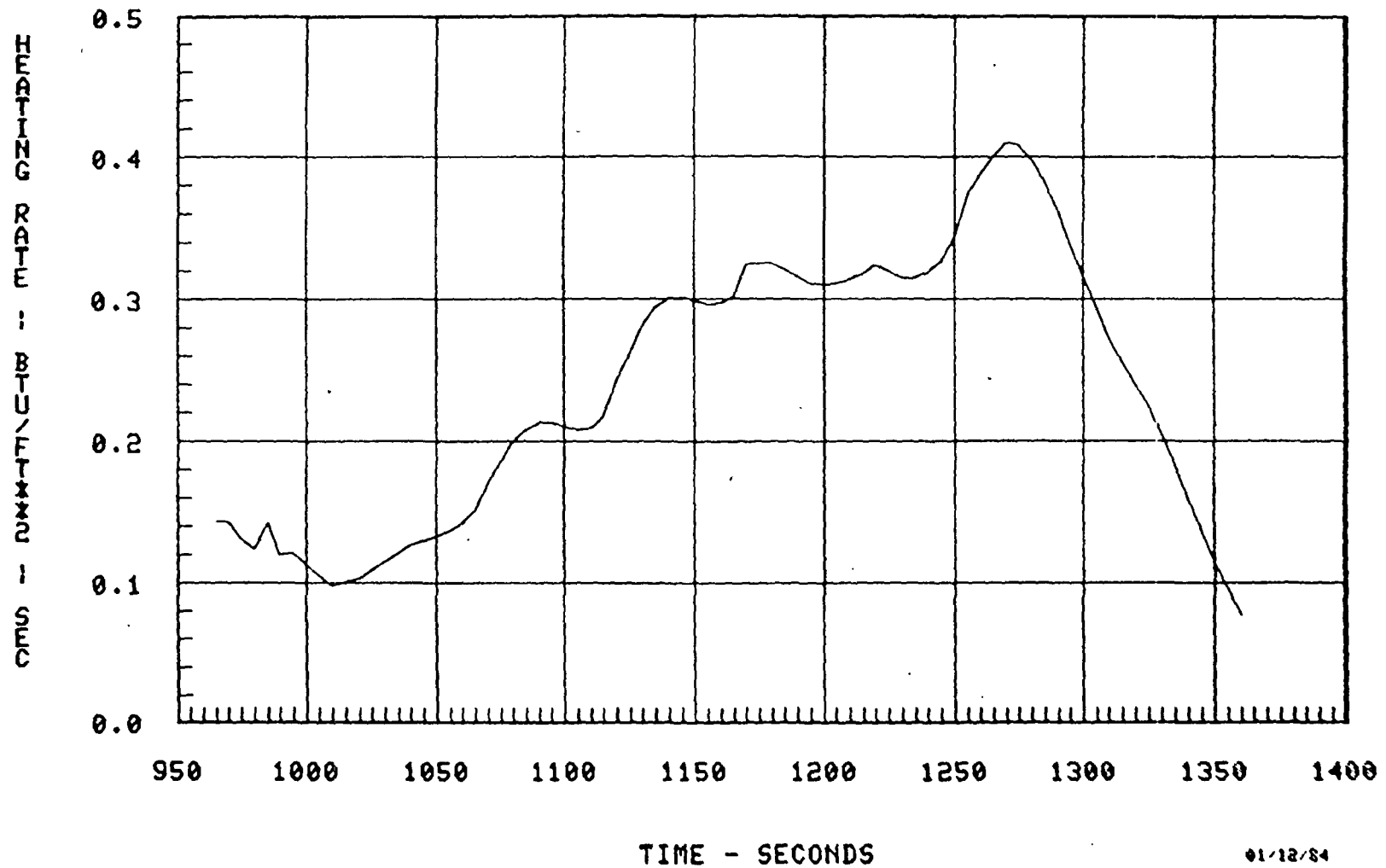
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.65$ )  $Z=400$

U07T9255A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.65$ )  $Z=400$

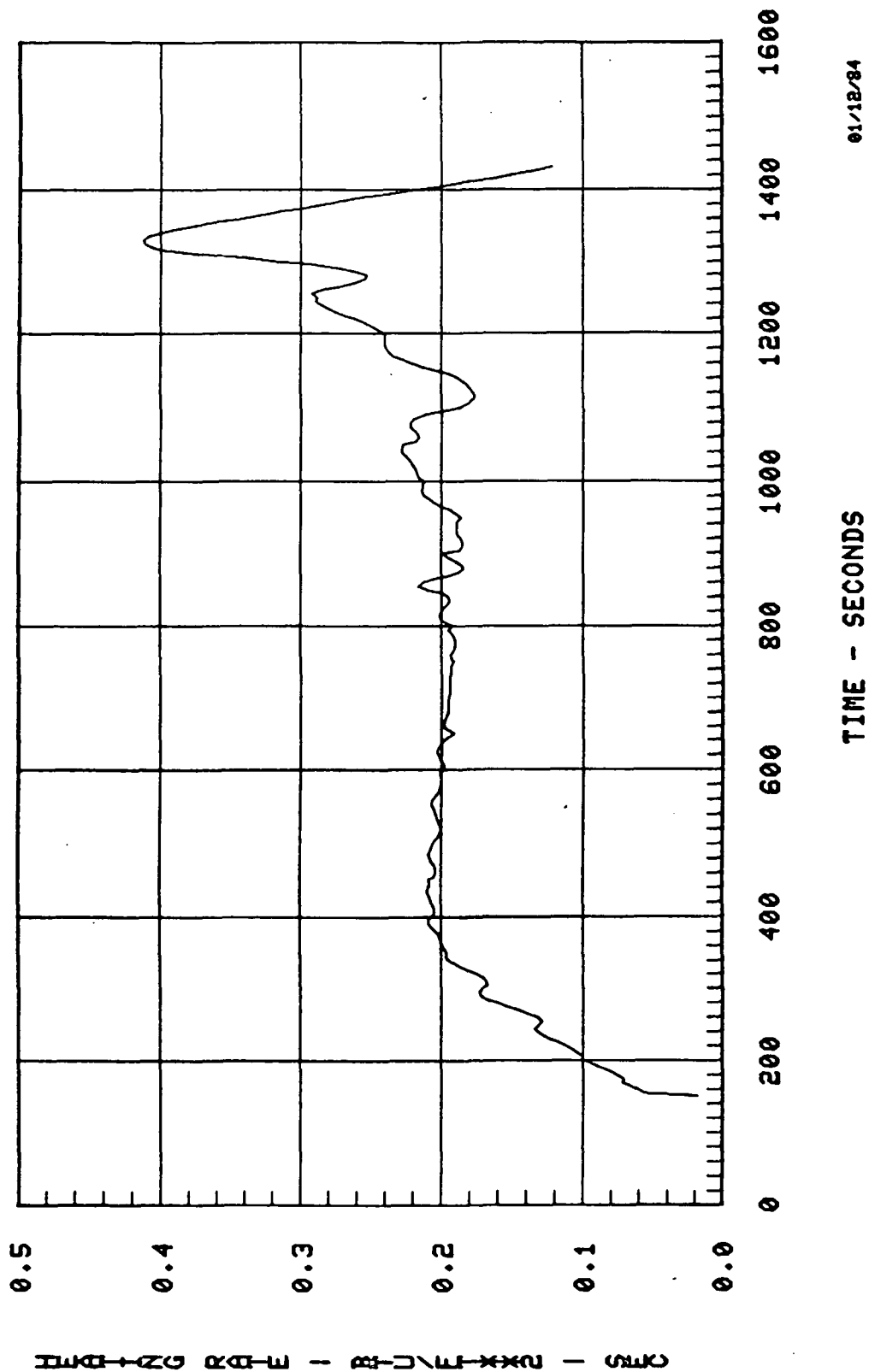
U07T9255A



01/12/84

STS-5 (107 FT LENGTH SIDE FUS X/L=0.65) Z=400

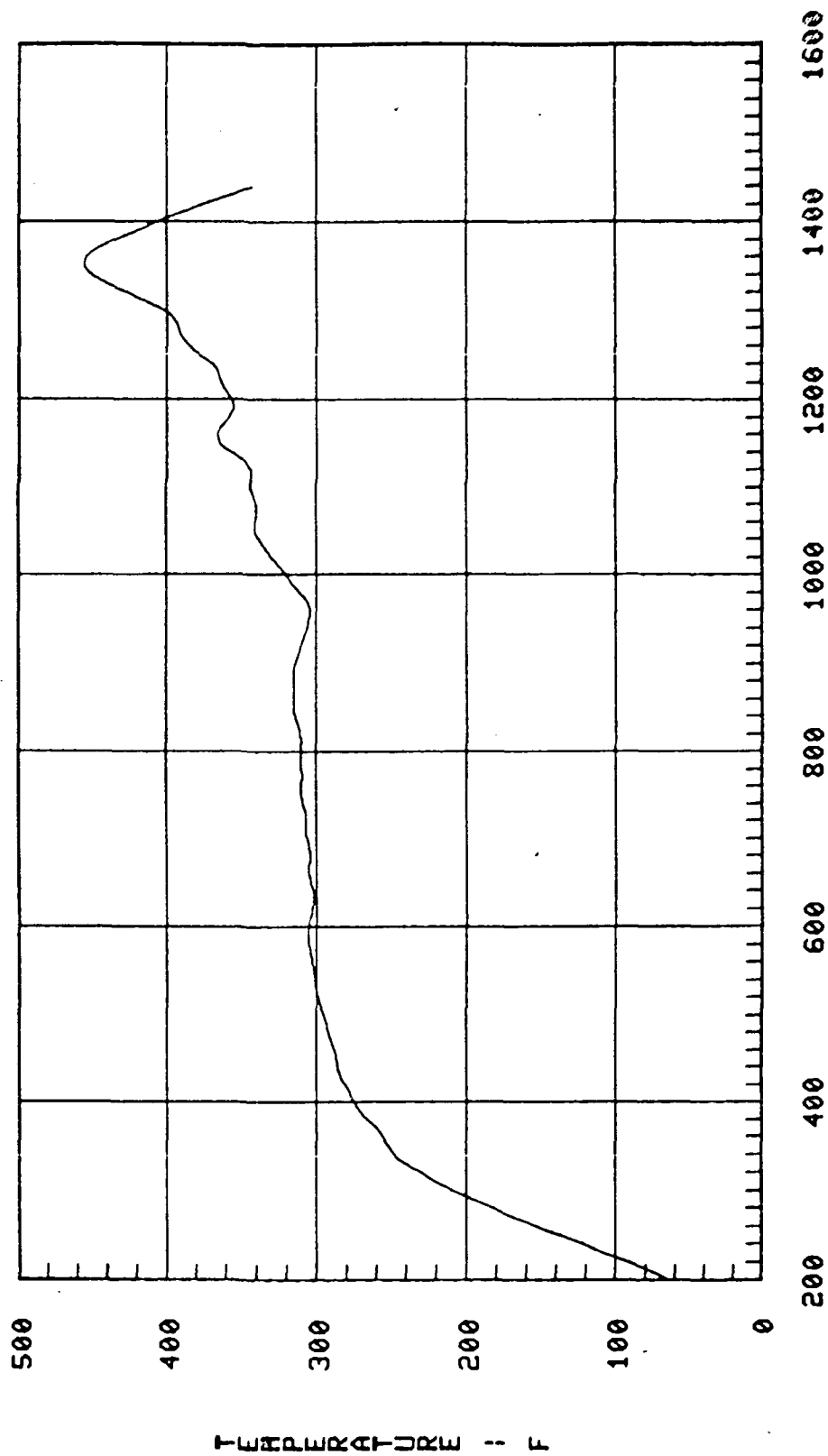
U07T9255A



01/18/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.65$ )  $Z=400$

U07T9255A



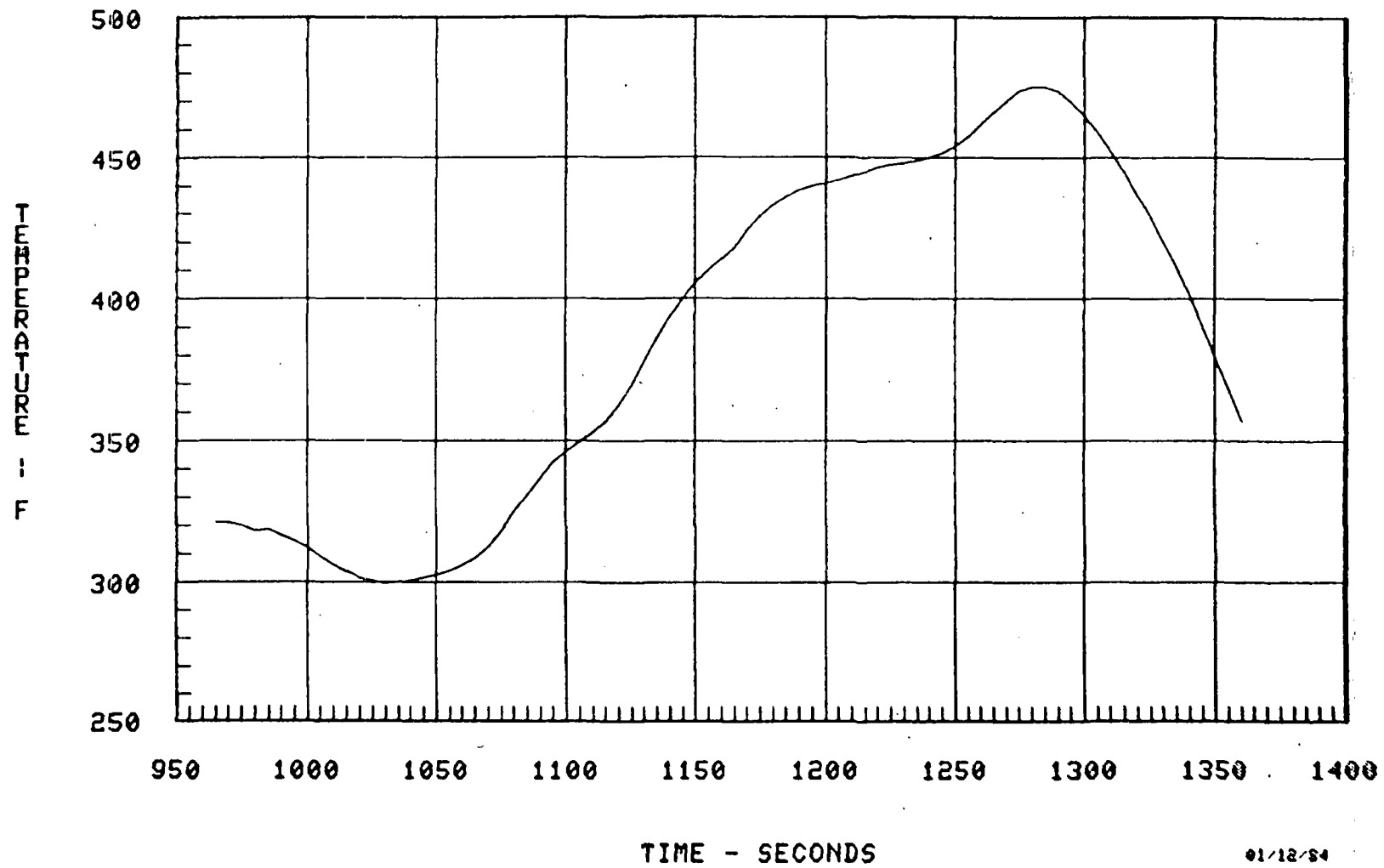
TIME - SECONDS

01/11/84



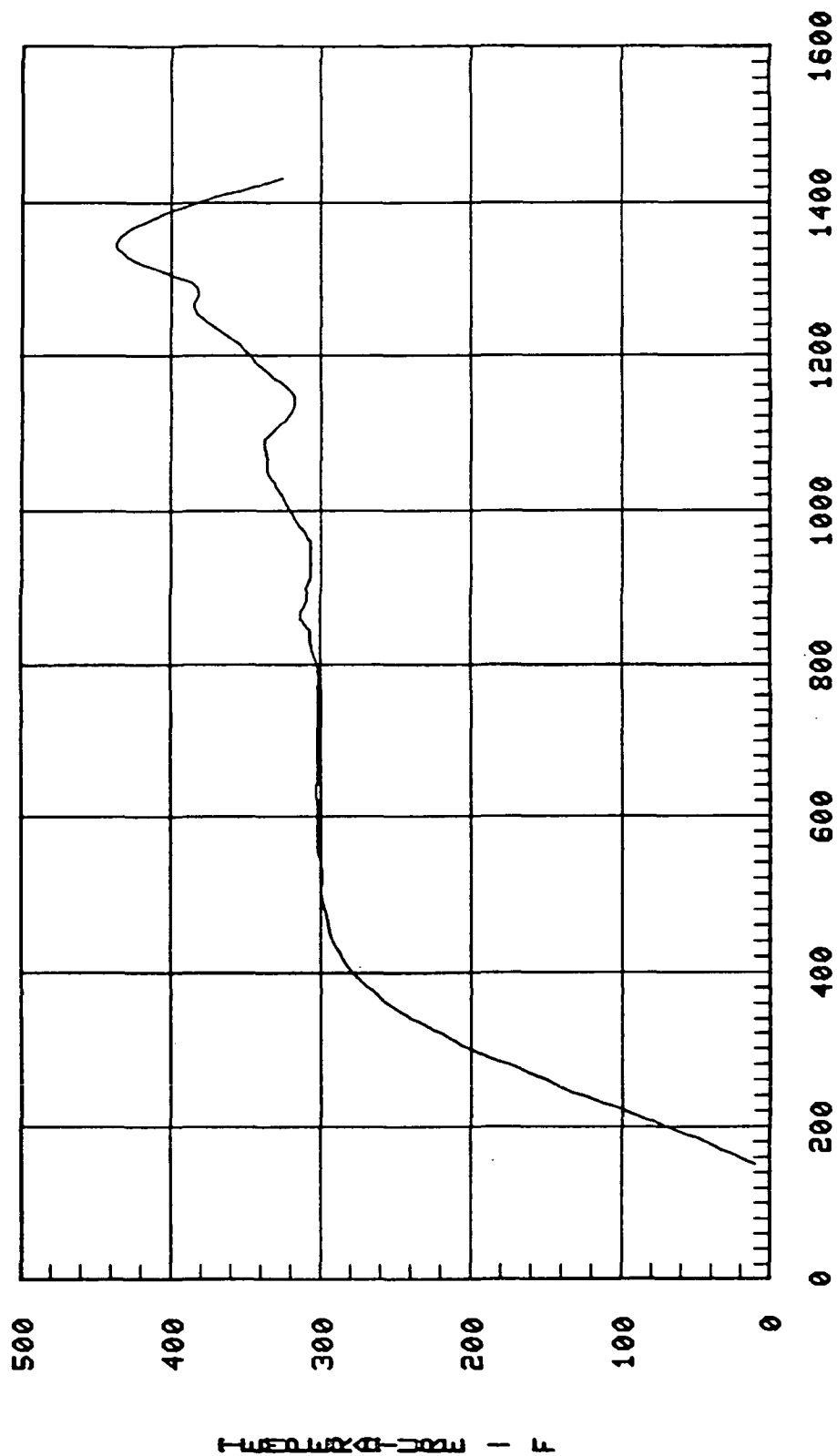
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.65$ )  $Z=400$

U07T9255A



STS-5 (107 FT LENGTH SIDE FUS X/L=0.65) Z=400

U07T9255A



TIME - SECONDS

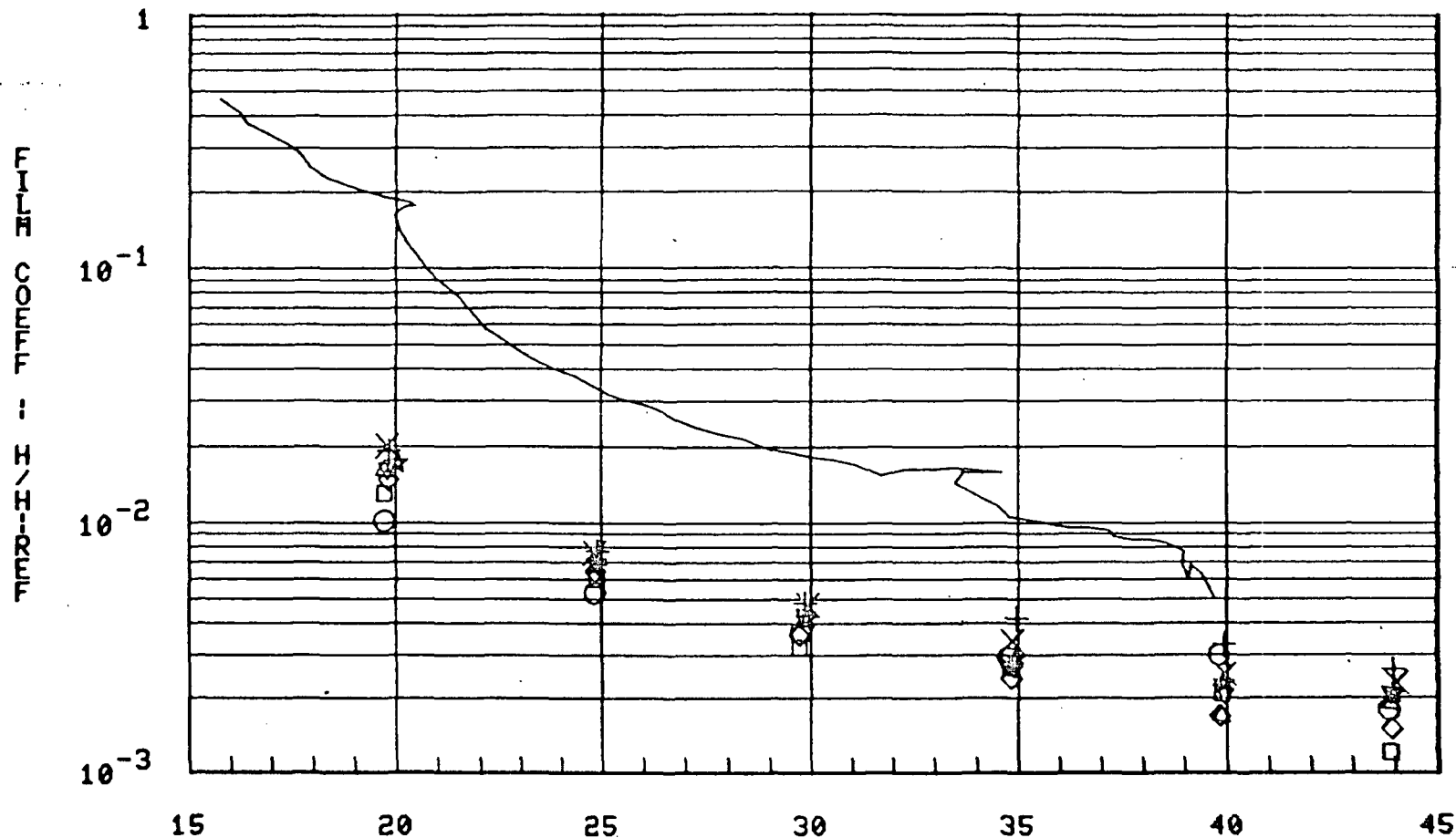
01/18/84

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

○  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U09T9511A/H-REF 1065-1500 SEC



ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 09049744.000 SEC.

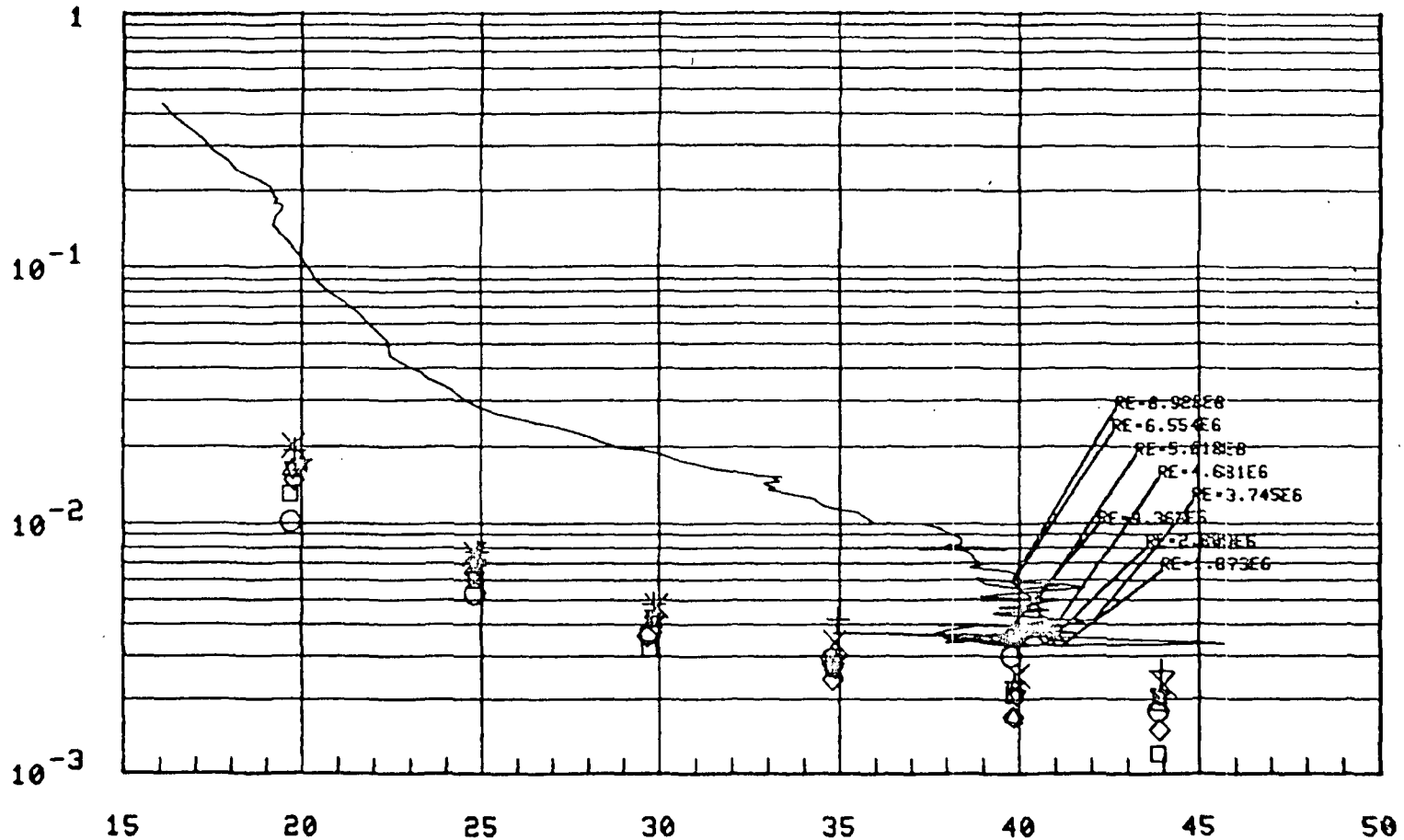
# STS-2 (107 FT LENGTH SIDE FUS X/L=0.67) Z=400

○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U09T9511A/H-REF 200-1530 SEC

FILM COEFF. : H/H-REF



B-267

ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 27550236.000 SEC.

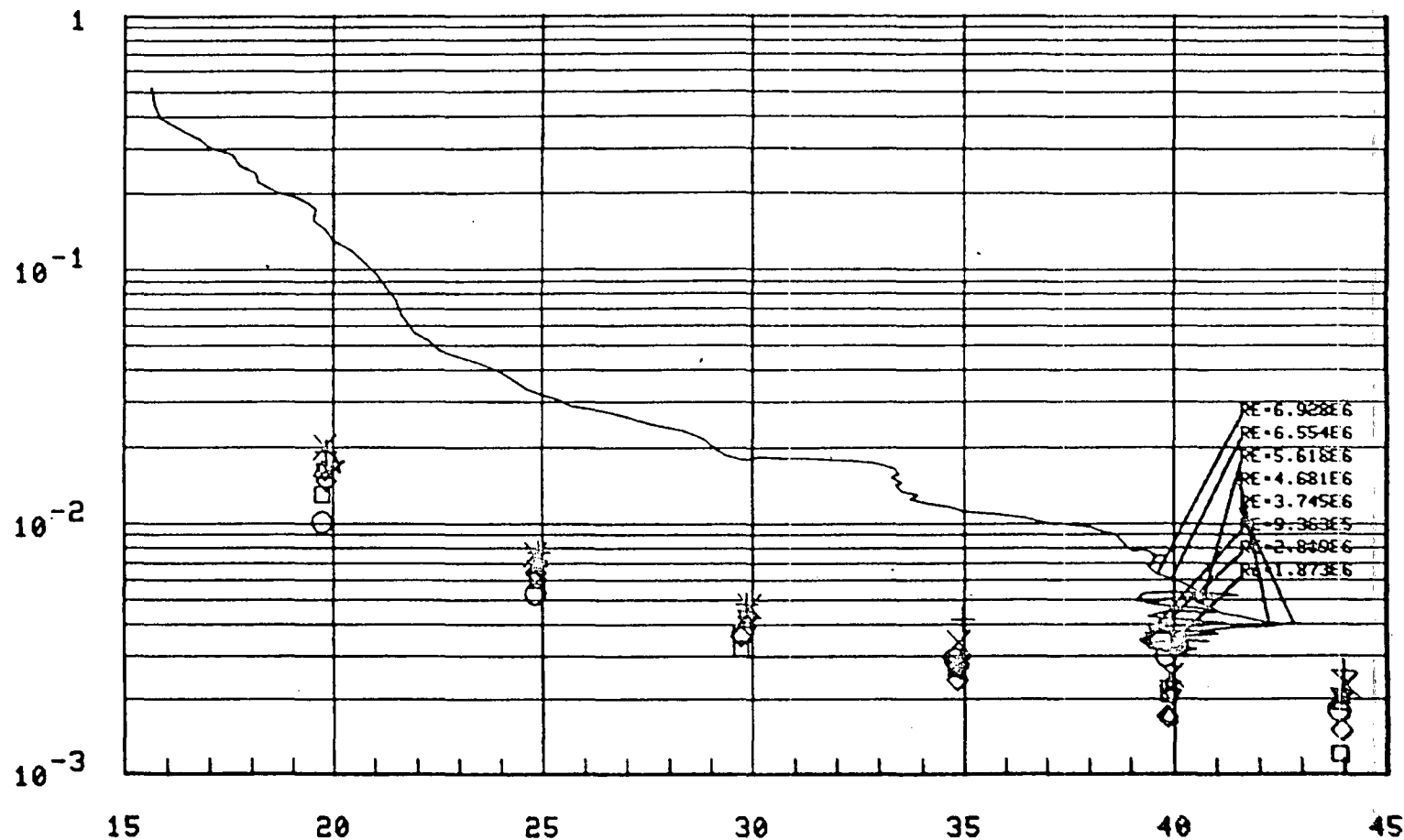
# STS-3 (107 FT LENGTH SIDE FUS X/L=0.67) Z=400

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U09T9511A/H-REF 200-1440 SEC

O  
□  
◇  
△  
▽  
★  
+  
X

FILE CODE -- H/H--RUL



ANGLE-OF-ATTACK - DEG

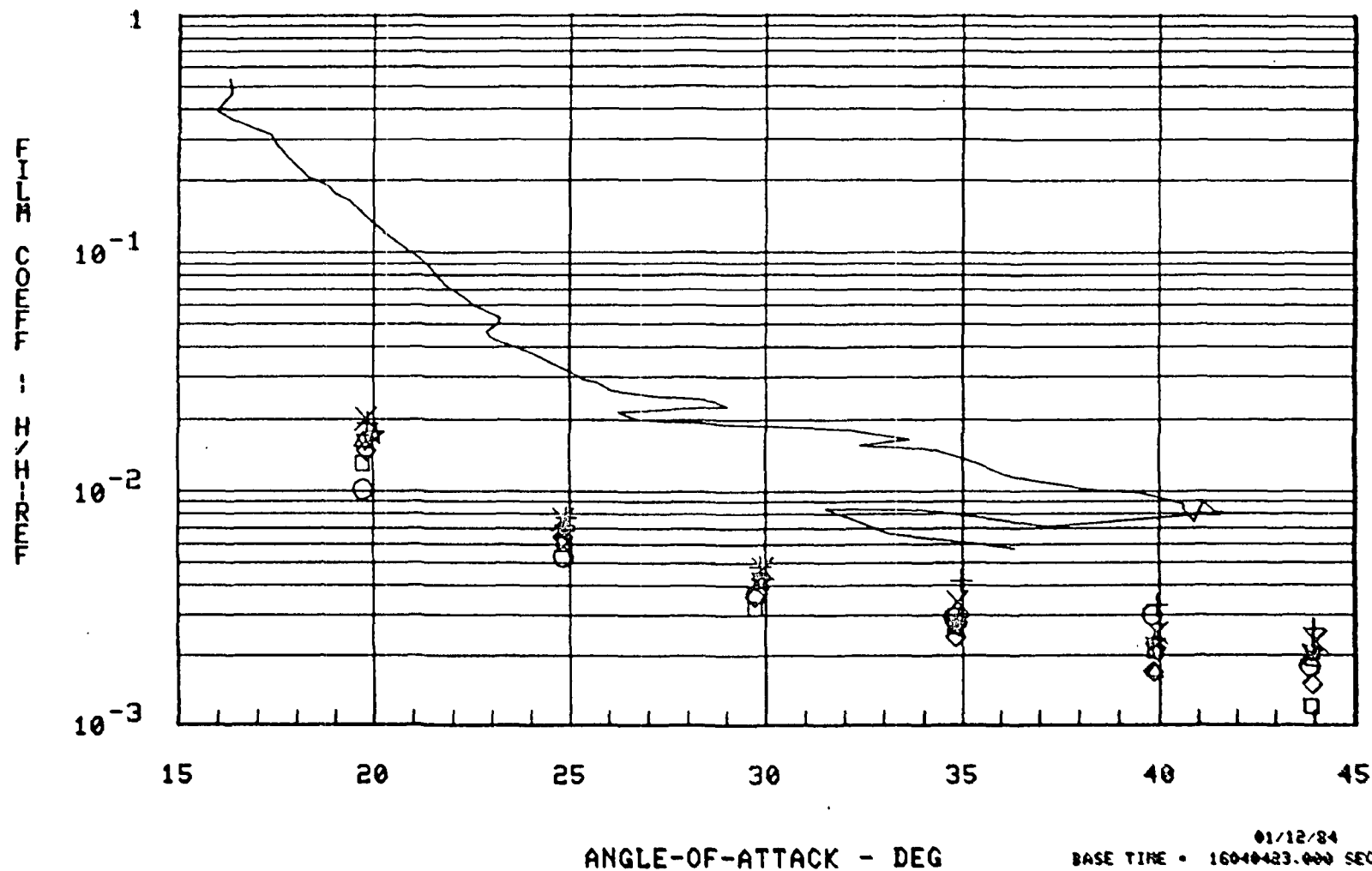
01/11/84  
 BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

O  
□  
◇  
△  
▽  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U09T9511A/H-REF 965-1360 SEC



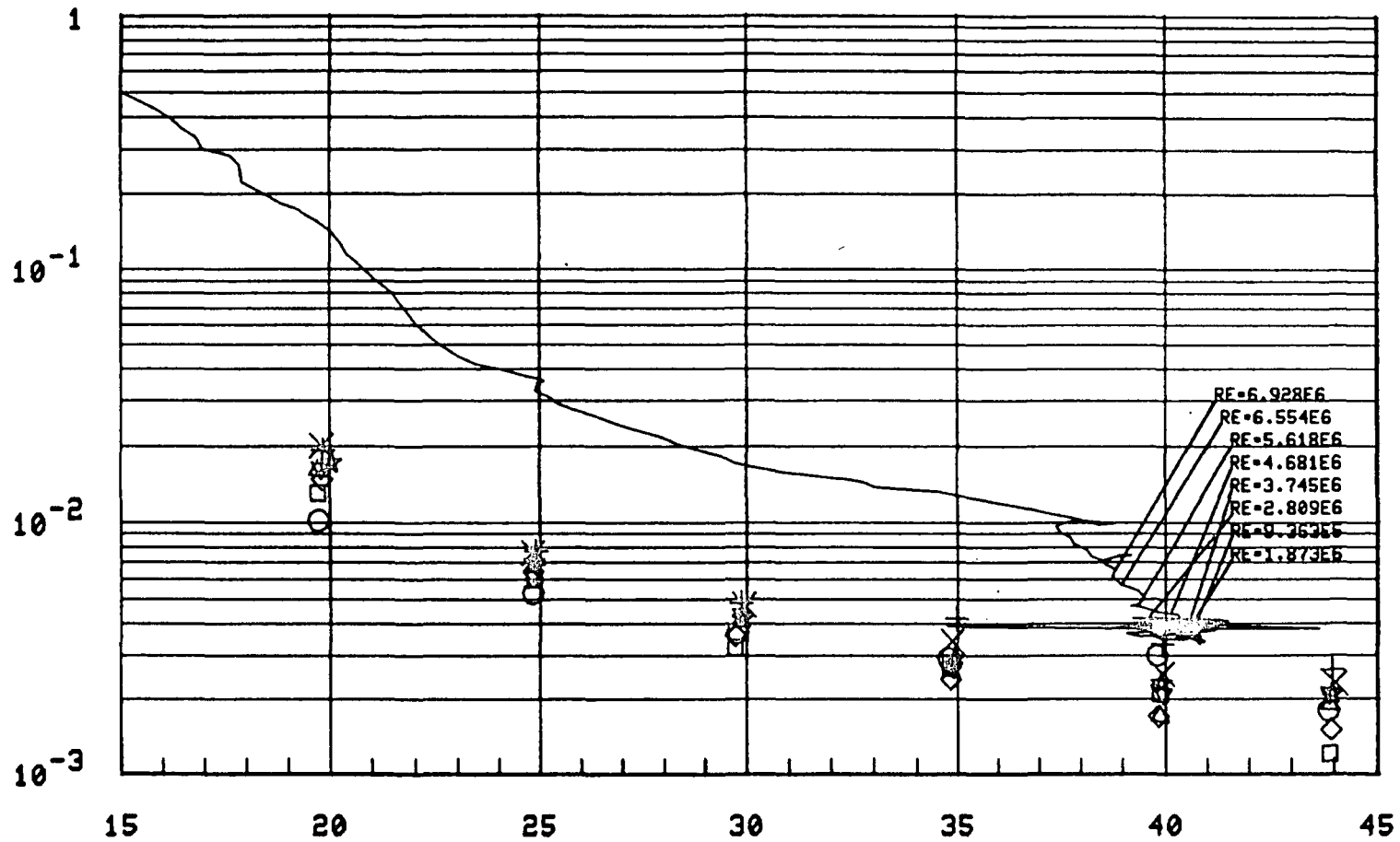
# STS-5 (107 FT LENGTH SIDE FUS X/L=0.67) Z=400

○  
◇  
△  
▽  
★  
+  
×X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U09T9511A/H-REF 150-1430 SEC

WAVE COEFF - I/I-0200

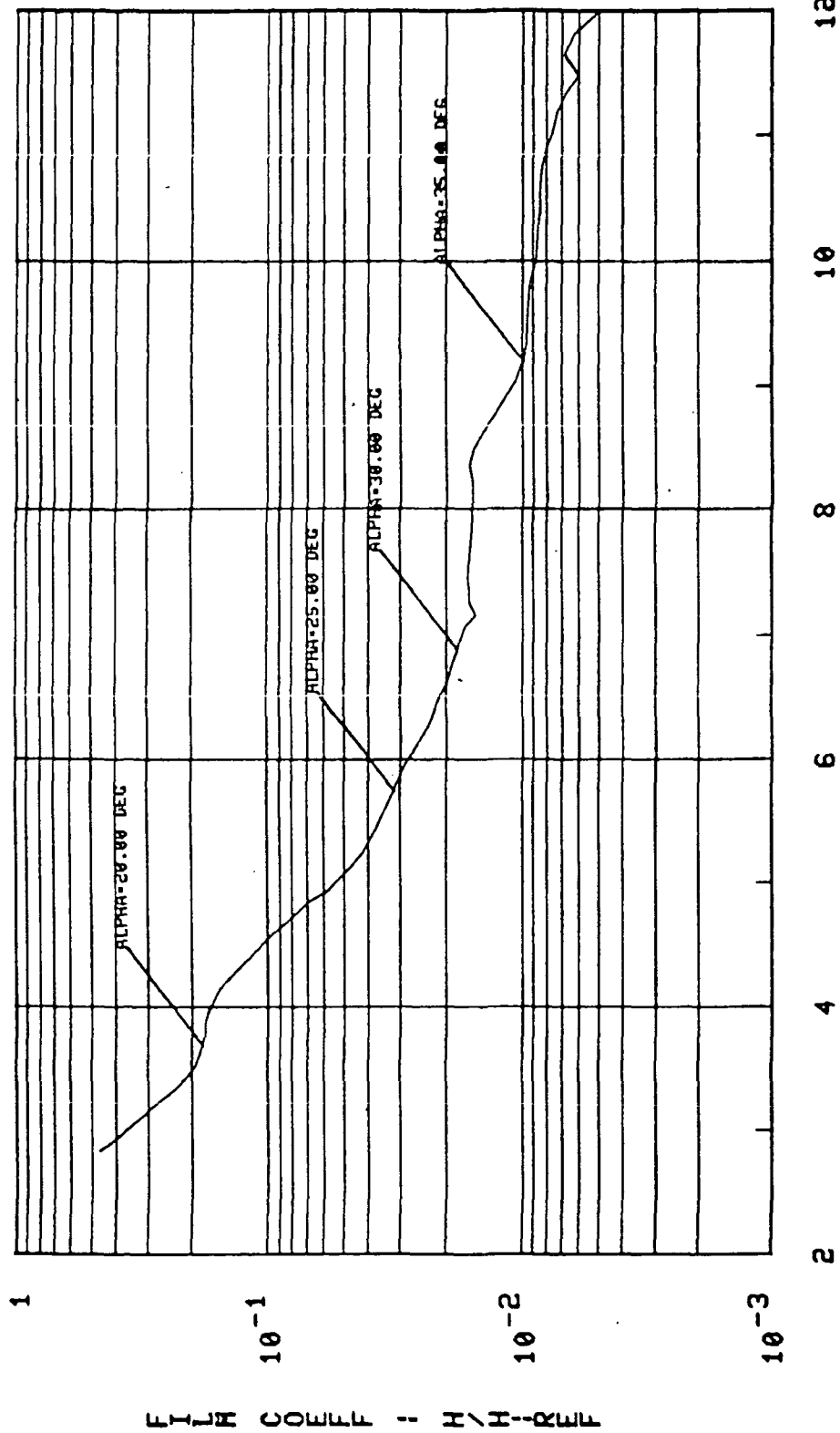


ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

U09T9S11A/H-REF 1065-1500 SEC



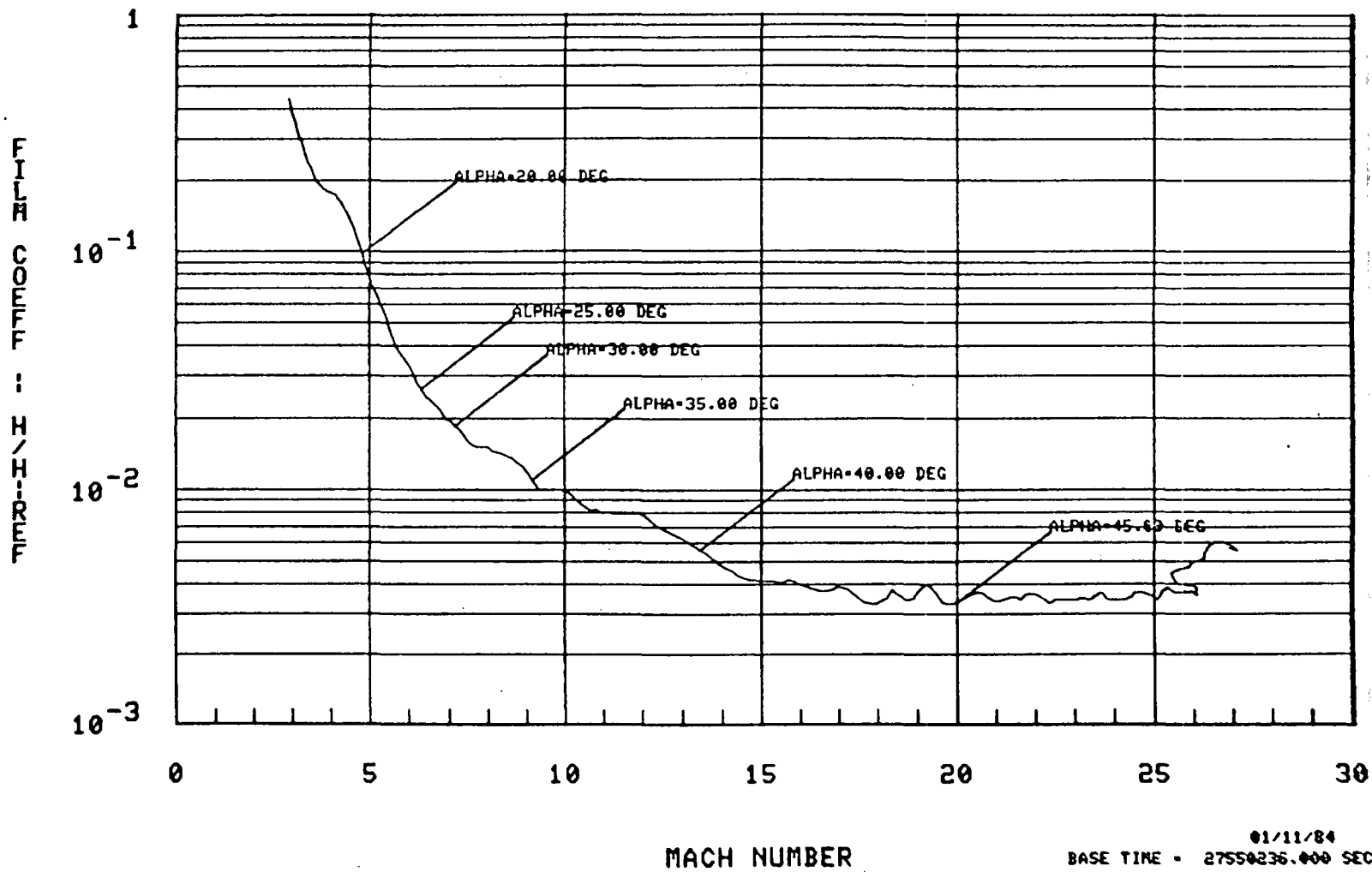
01/11/84  
BASE TIME - 09049744.000 SEC.

MACH NUMBER



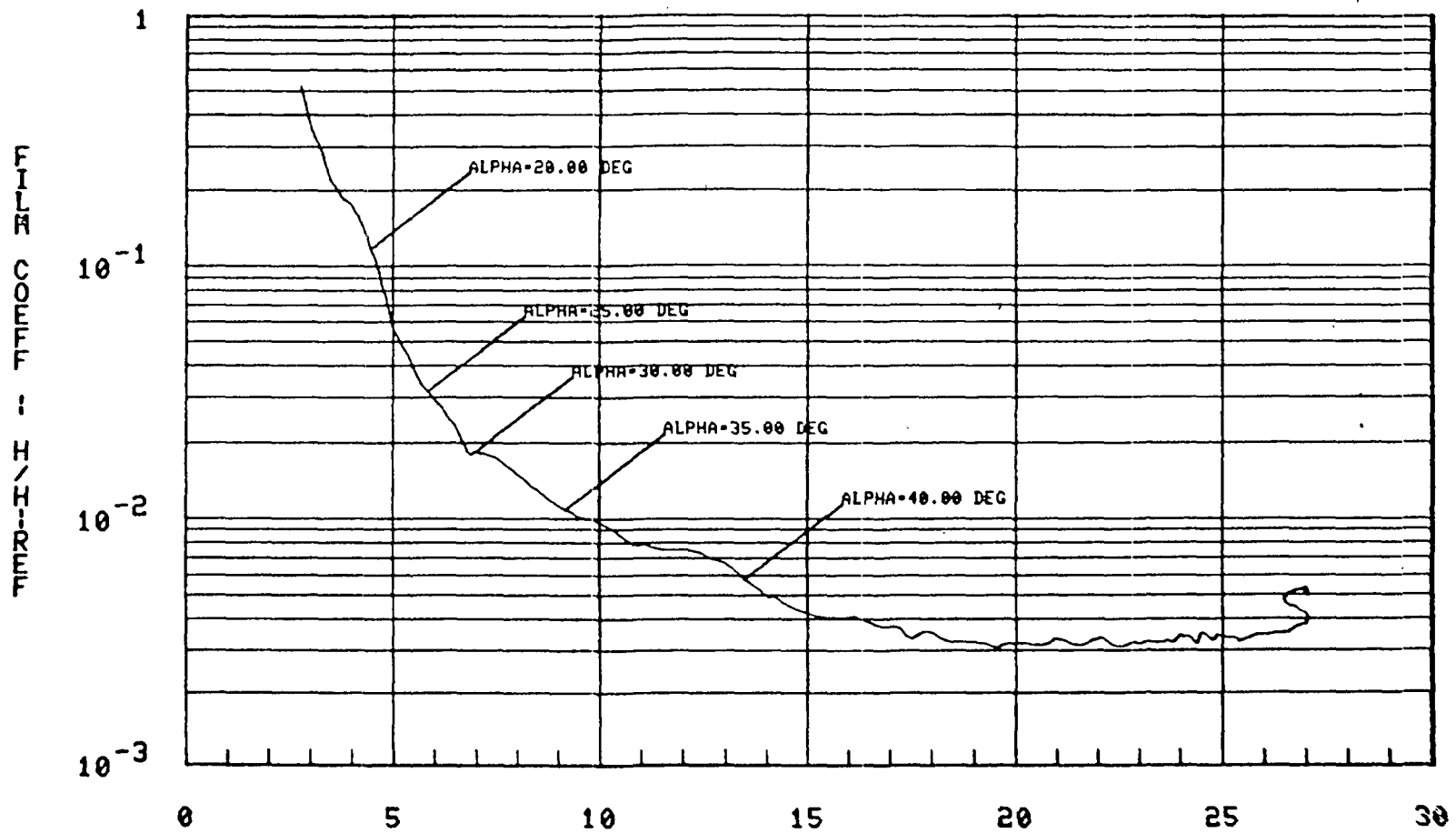
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

U09T9511A/H-REF 200-1530 SEC



STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A/H-REF 200-1440 SEC



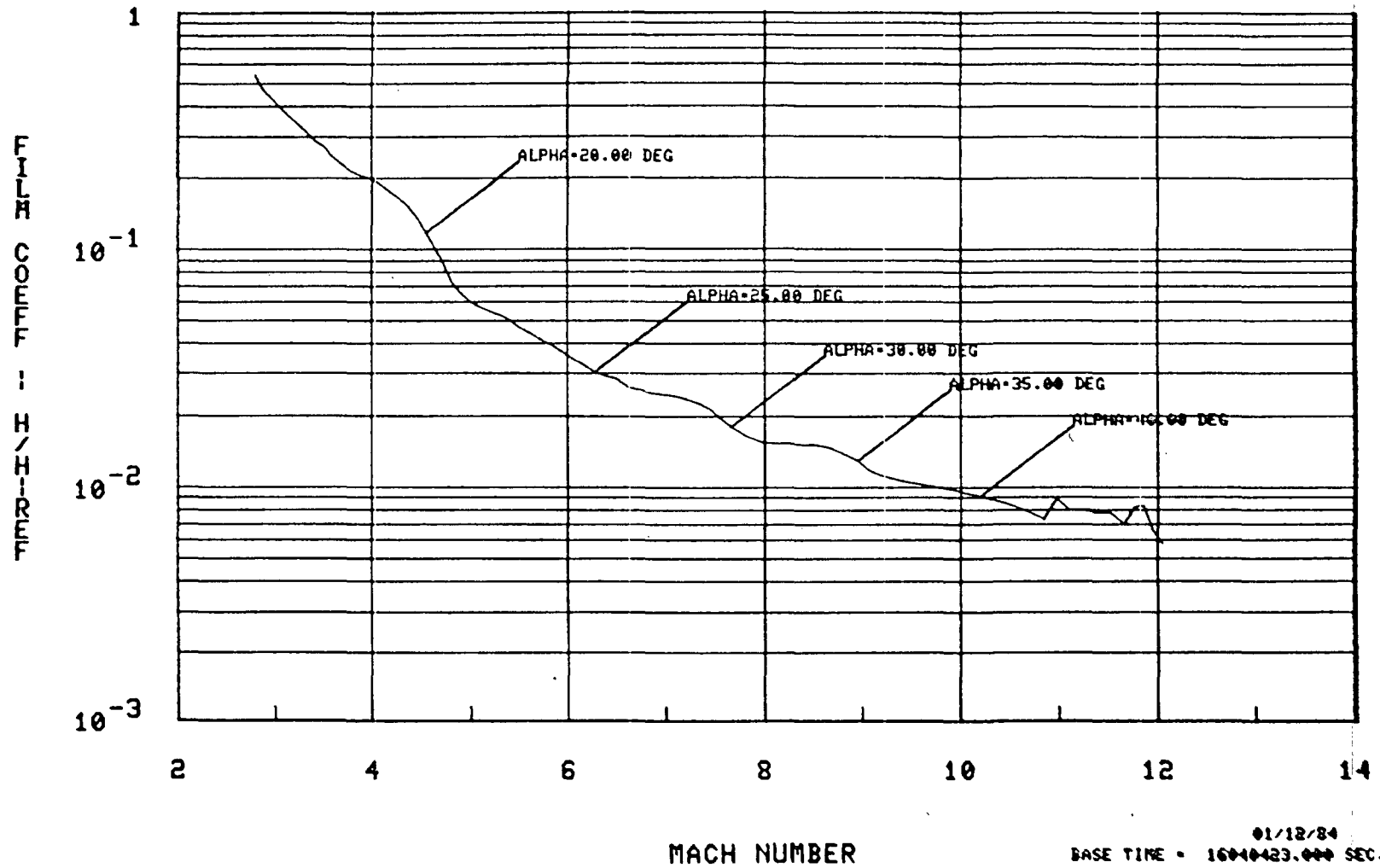
B-273

MACH NUMBER

01/11/84  
BASE TIME = 07745684.000 SEC.

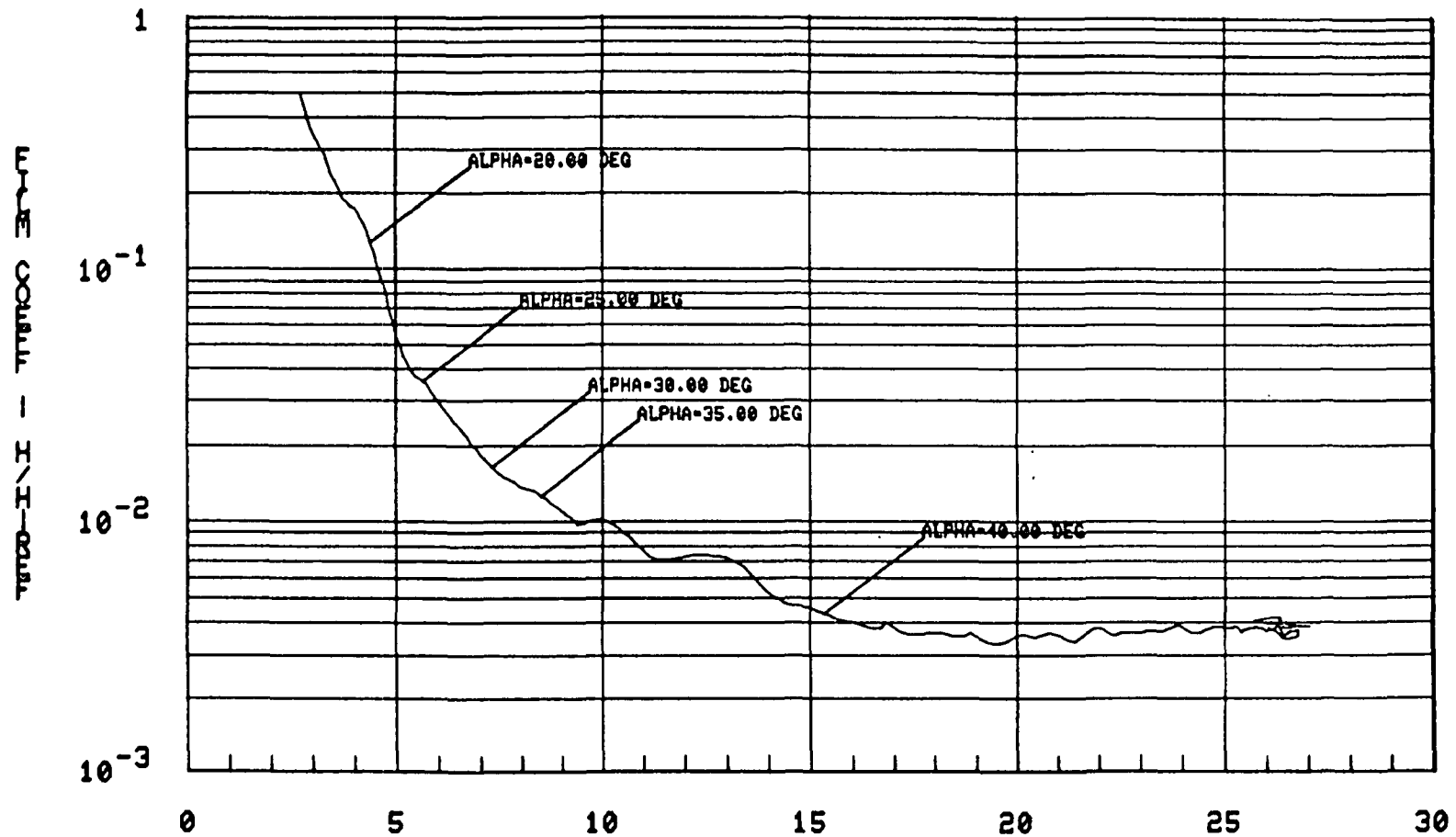
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

U09T9511A/H-REF 965-1360 SEC



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A/H-REF 150-1430 SEC



B-275

MACH NUMBER

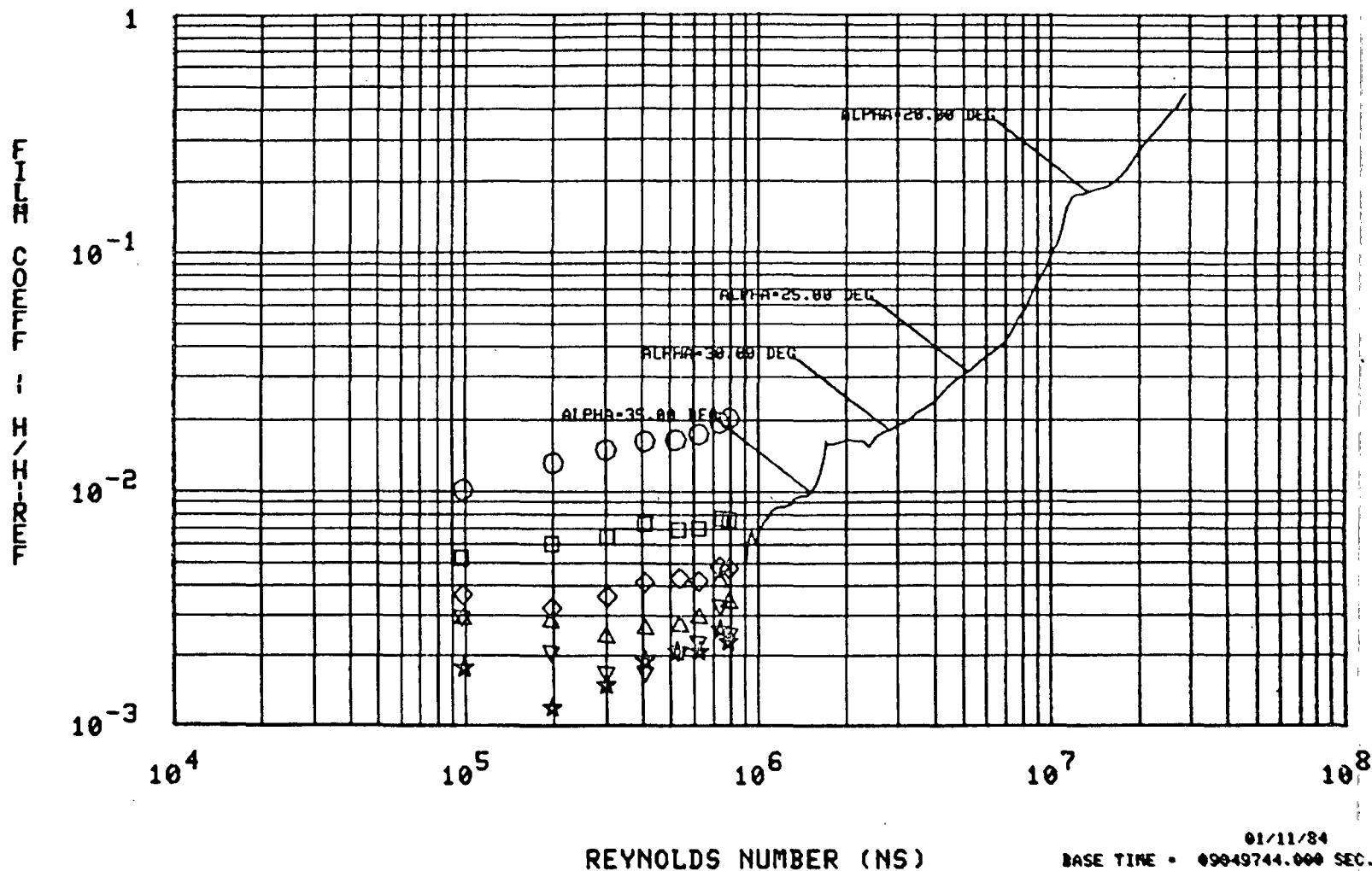
01/12/84  
BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U09T9511A/H-REF 1065-1500 SEC

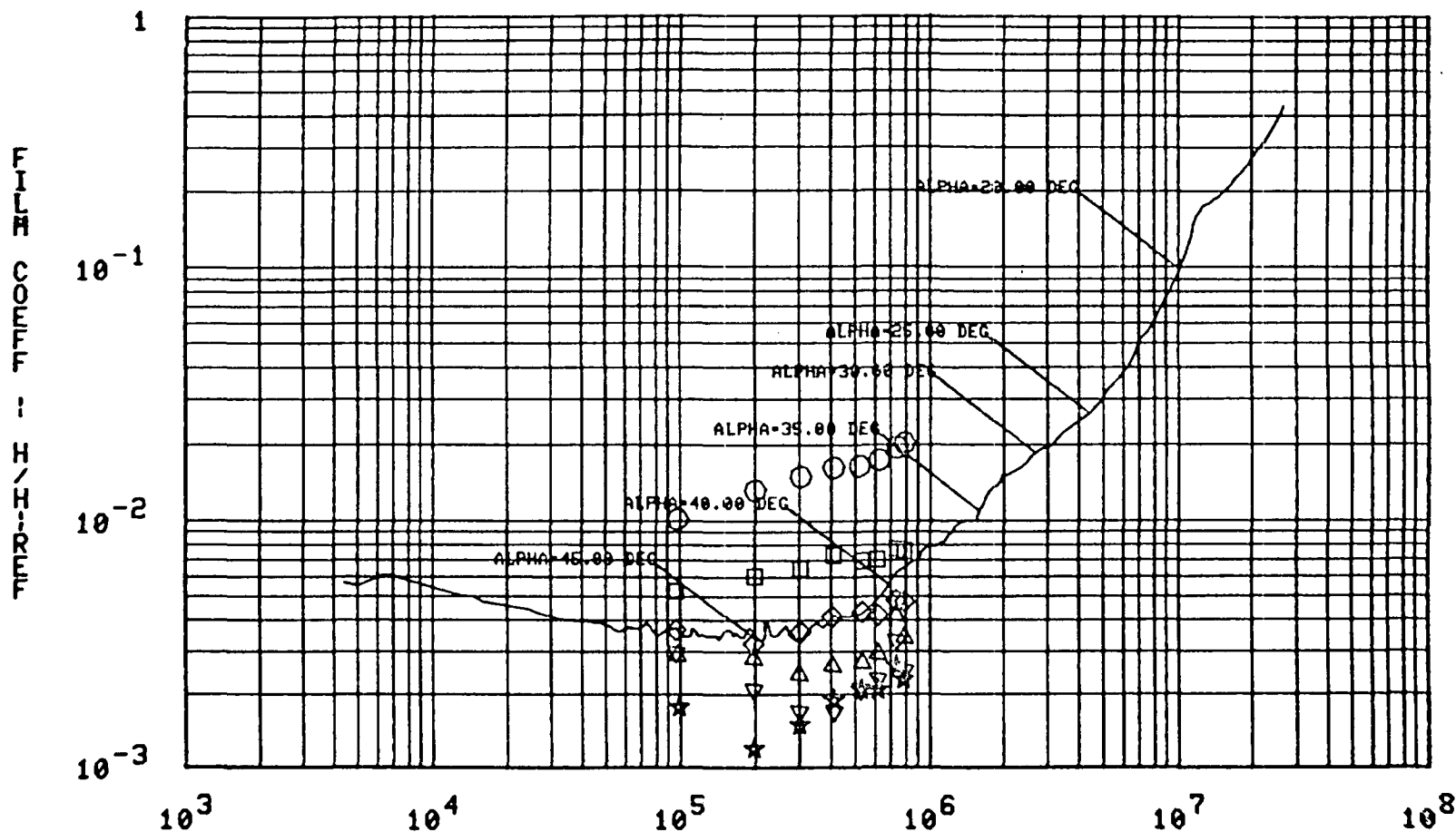


# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U89T9511A/H-REF 200-1530 SEC



REYNOLDS NUMBER (NS)

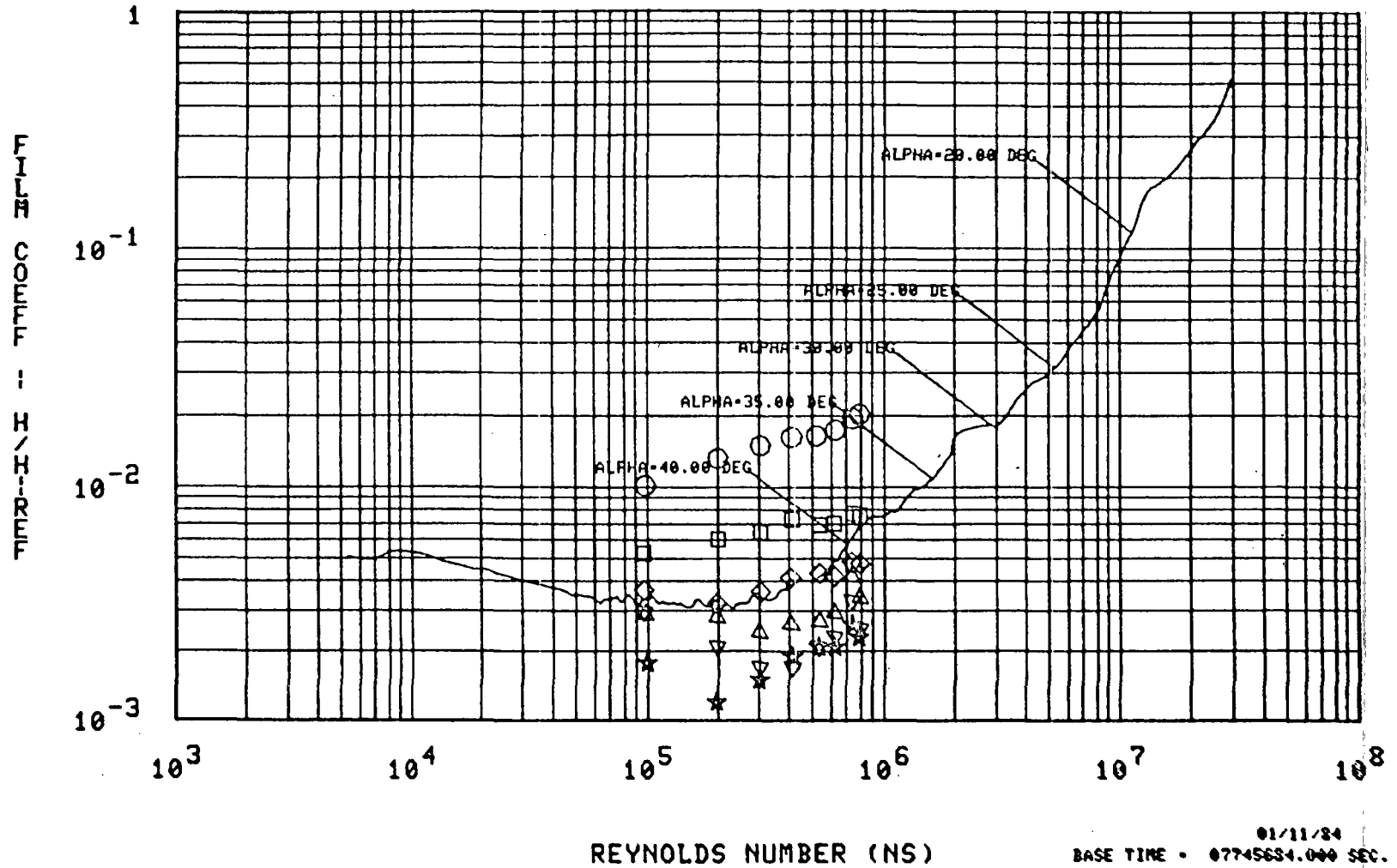
01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U09T9511A/H-REF 200-1440 SEC

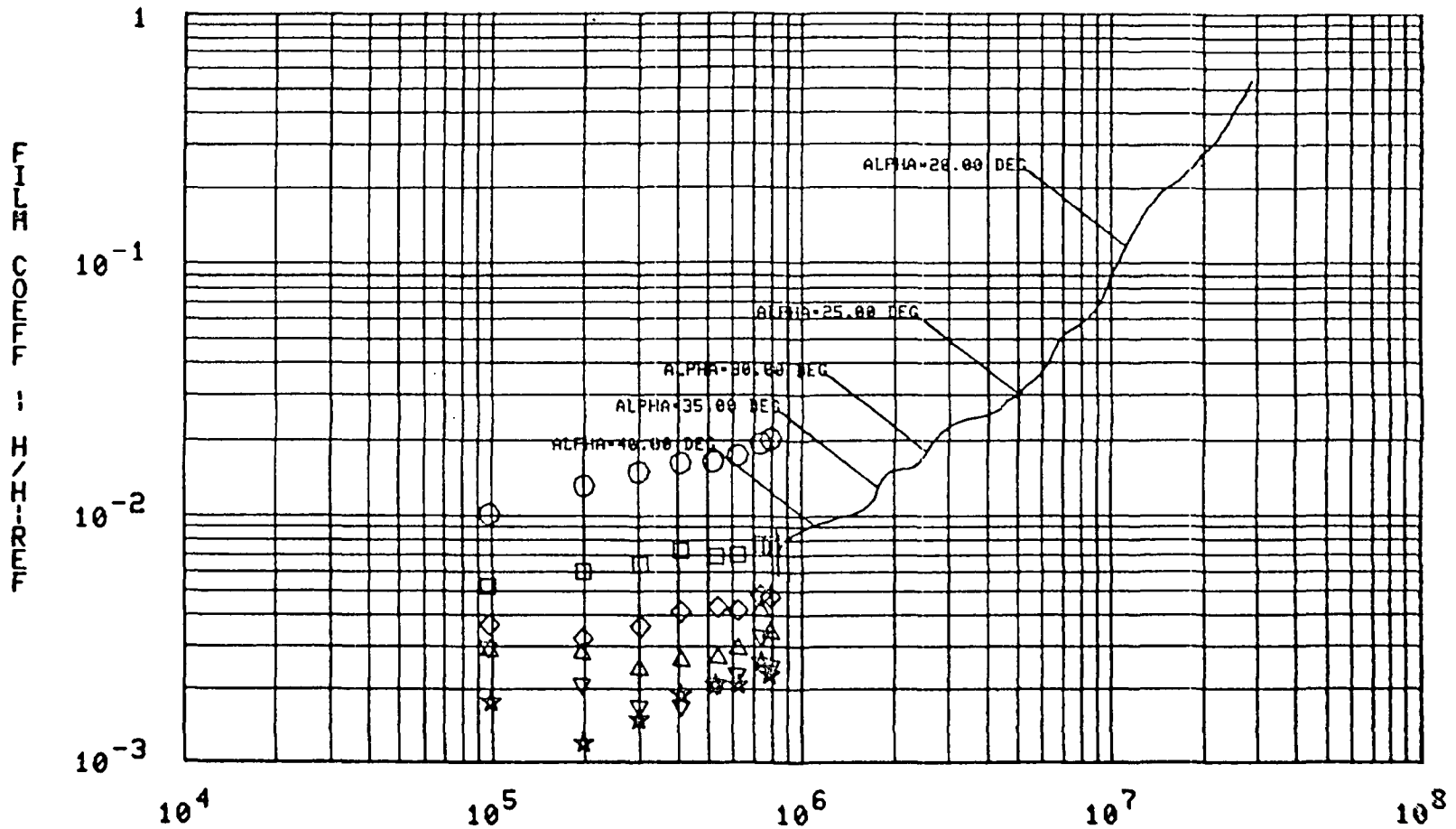


# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U09T9511A/H-REF 965-1360 SEC



REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME • 16040423.000 SEC.



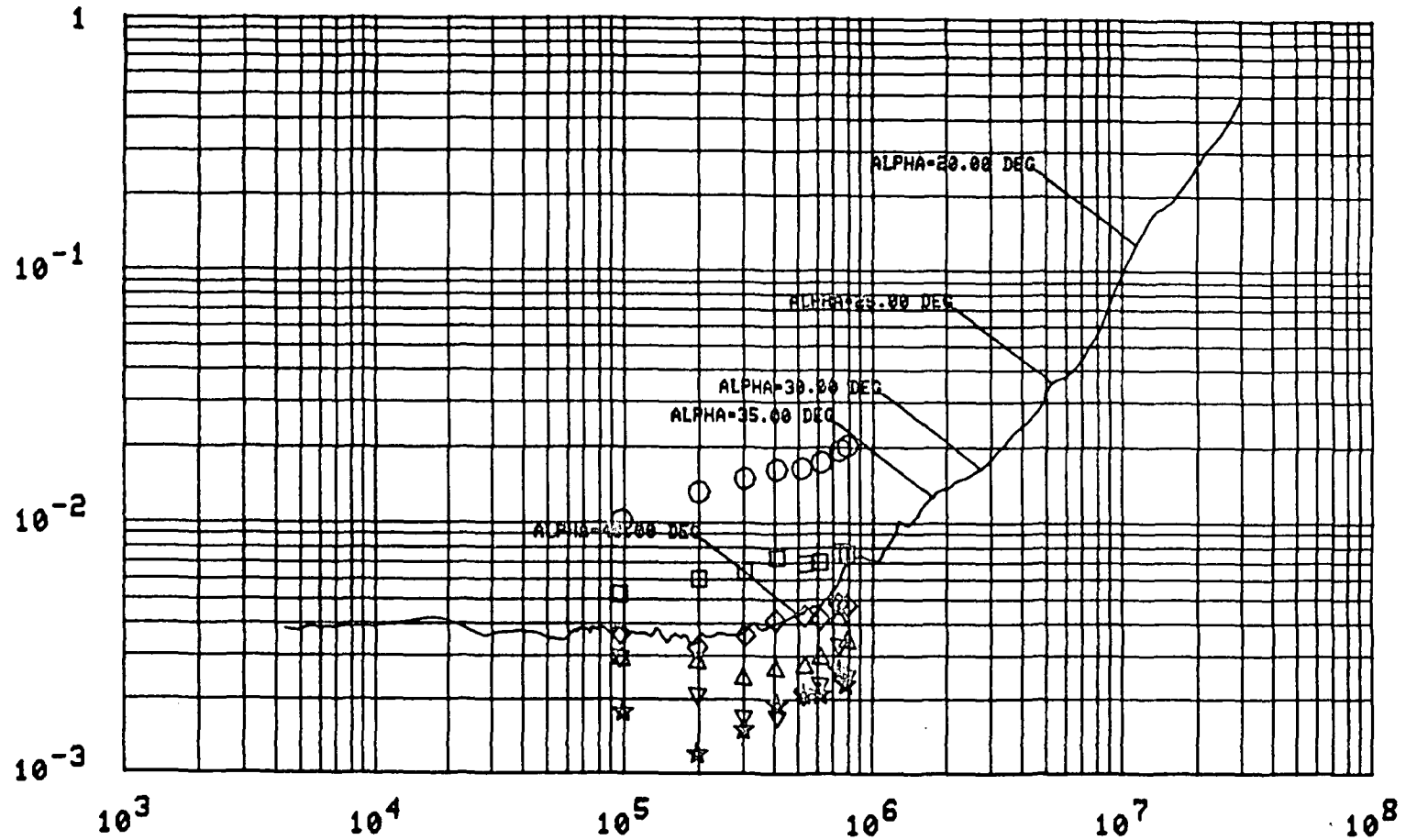
# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.67$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U09T9511A/H-REF 150-1430 SEC

WAVE COEFFICIENT - I/I-0200A

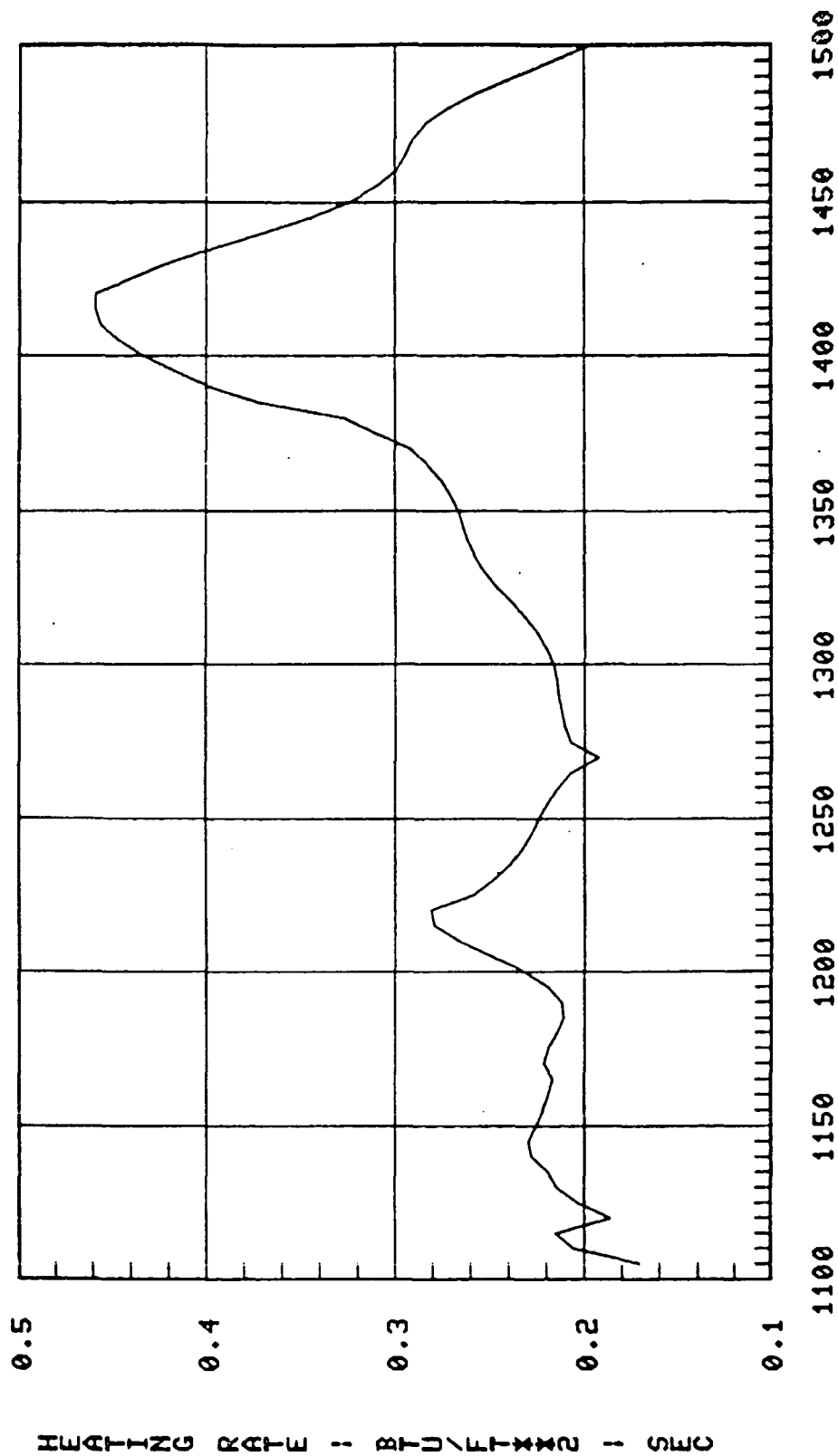


REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.67$ ) Z=400

U09T9511A

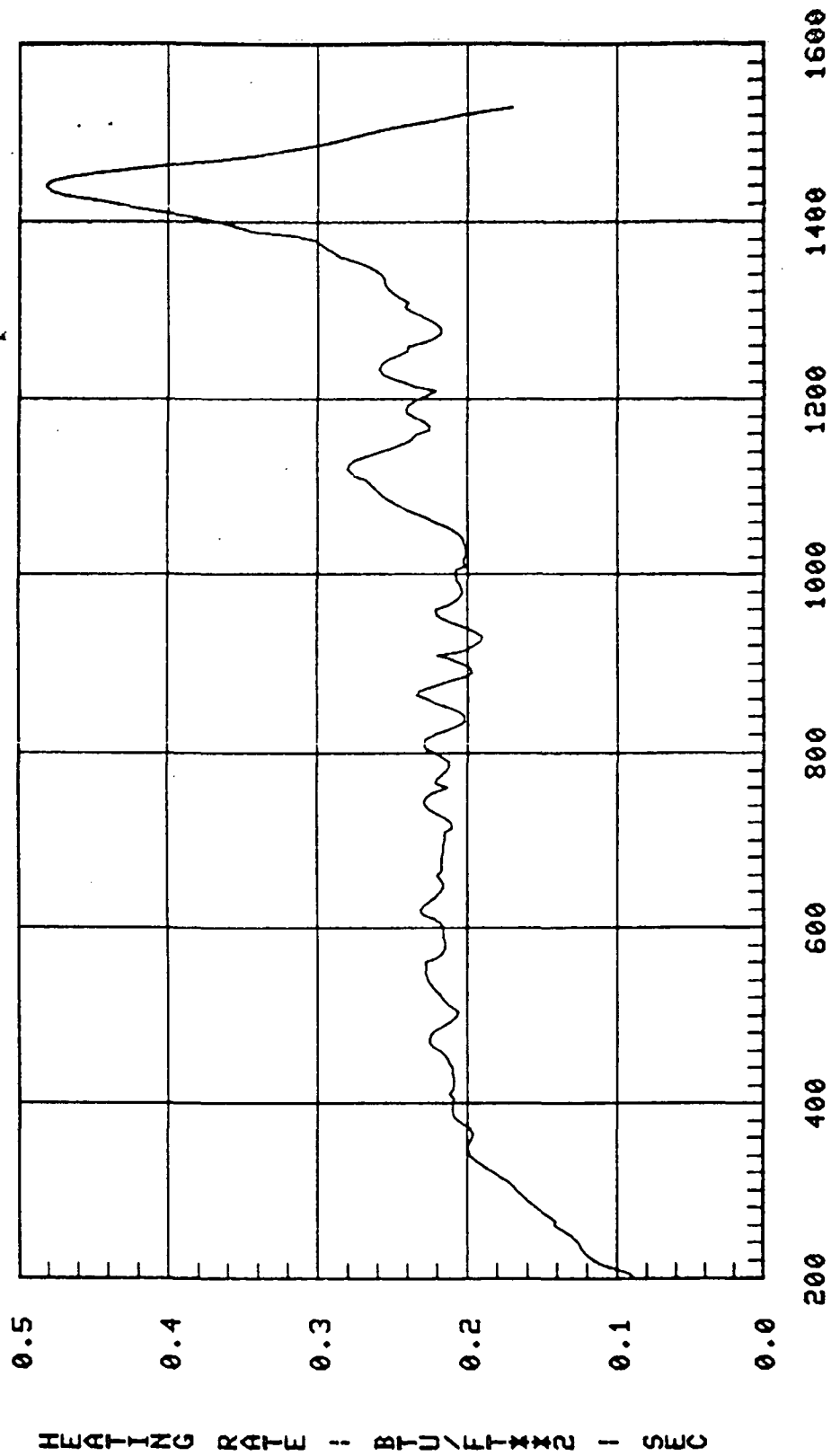


TIME - SECONDS

01/11/84

STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A

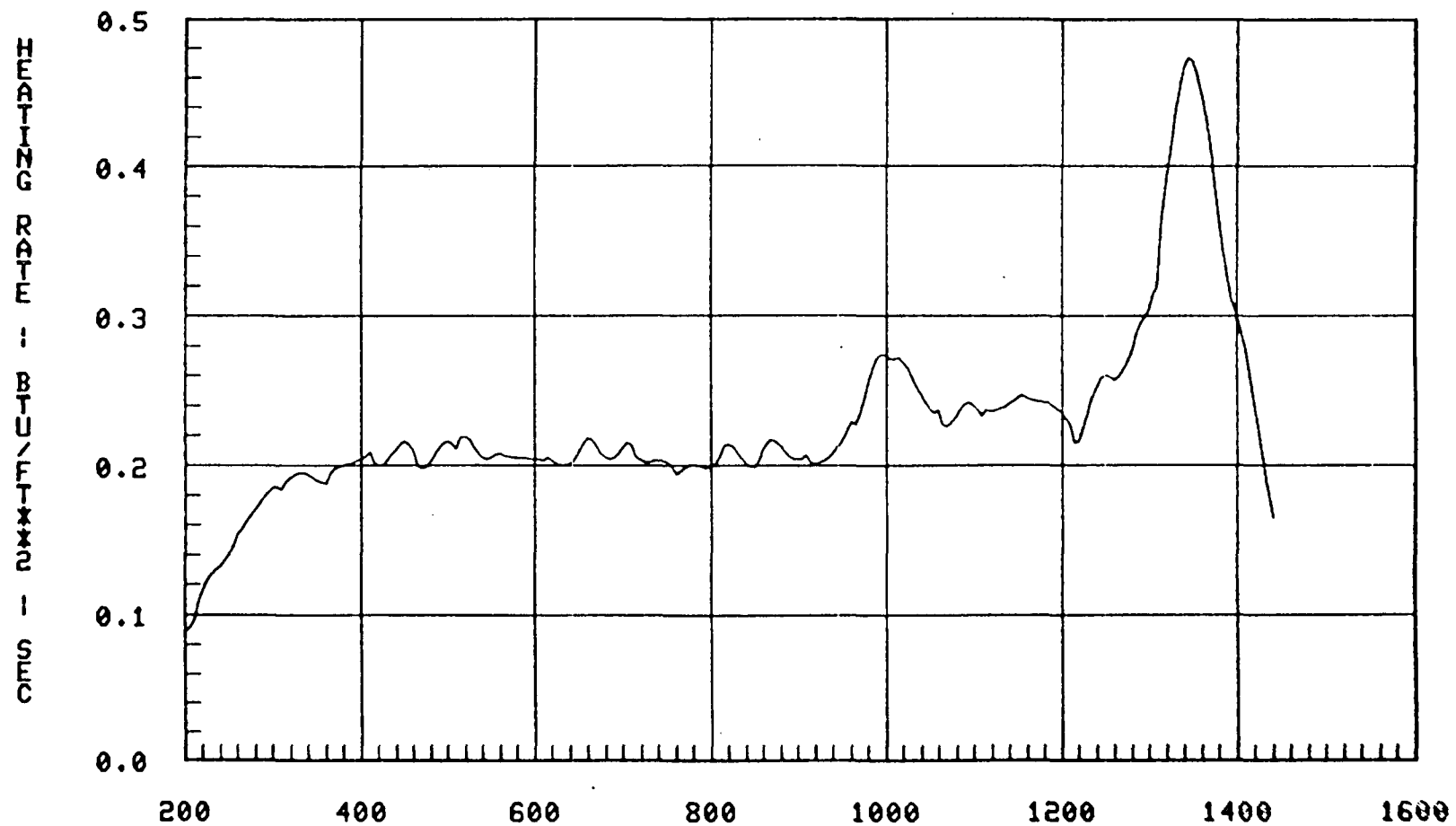


TIME - SECONDS

01/11/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A



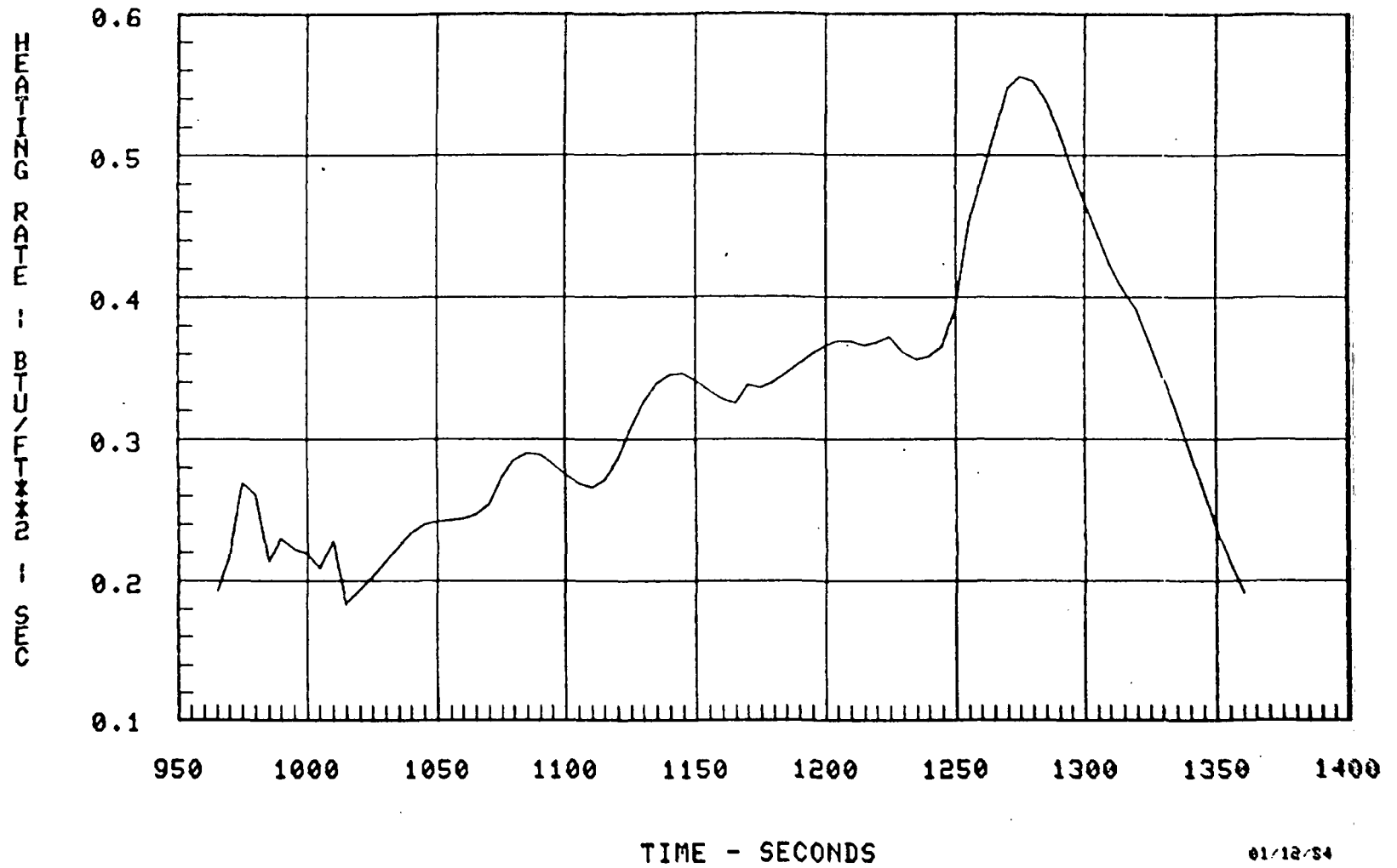
B-283

TIME - SECONDS

01/11/84

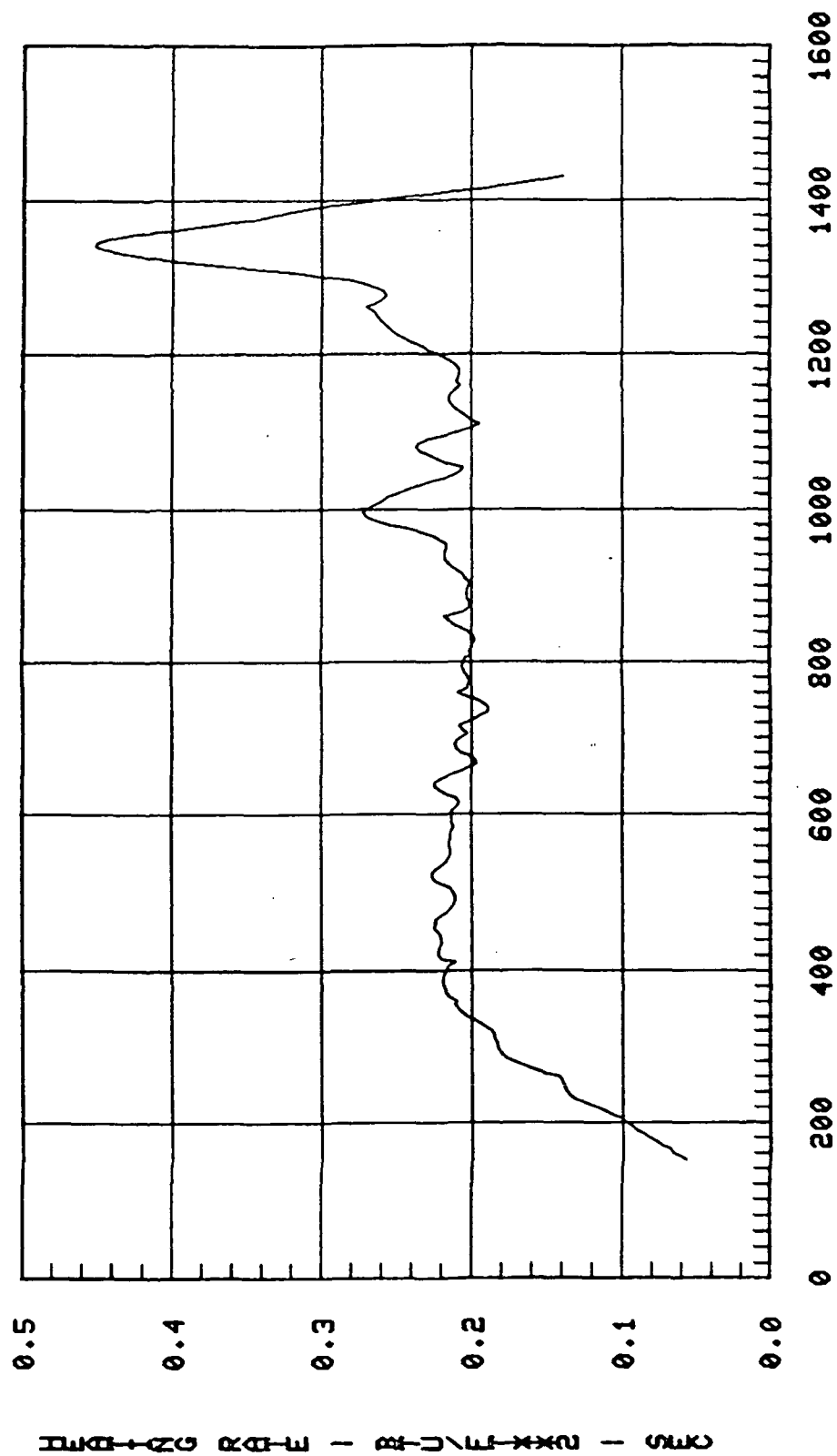
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A



STS-5 (107 FT LENGTH SIDE FUS X/L=0.67) Z=400

U09T9511A

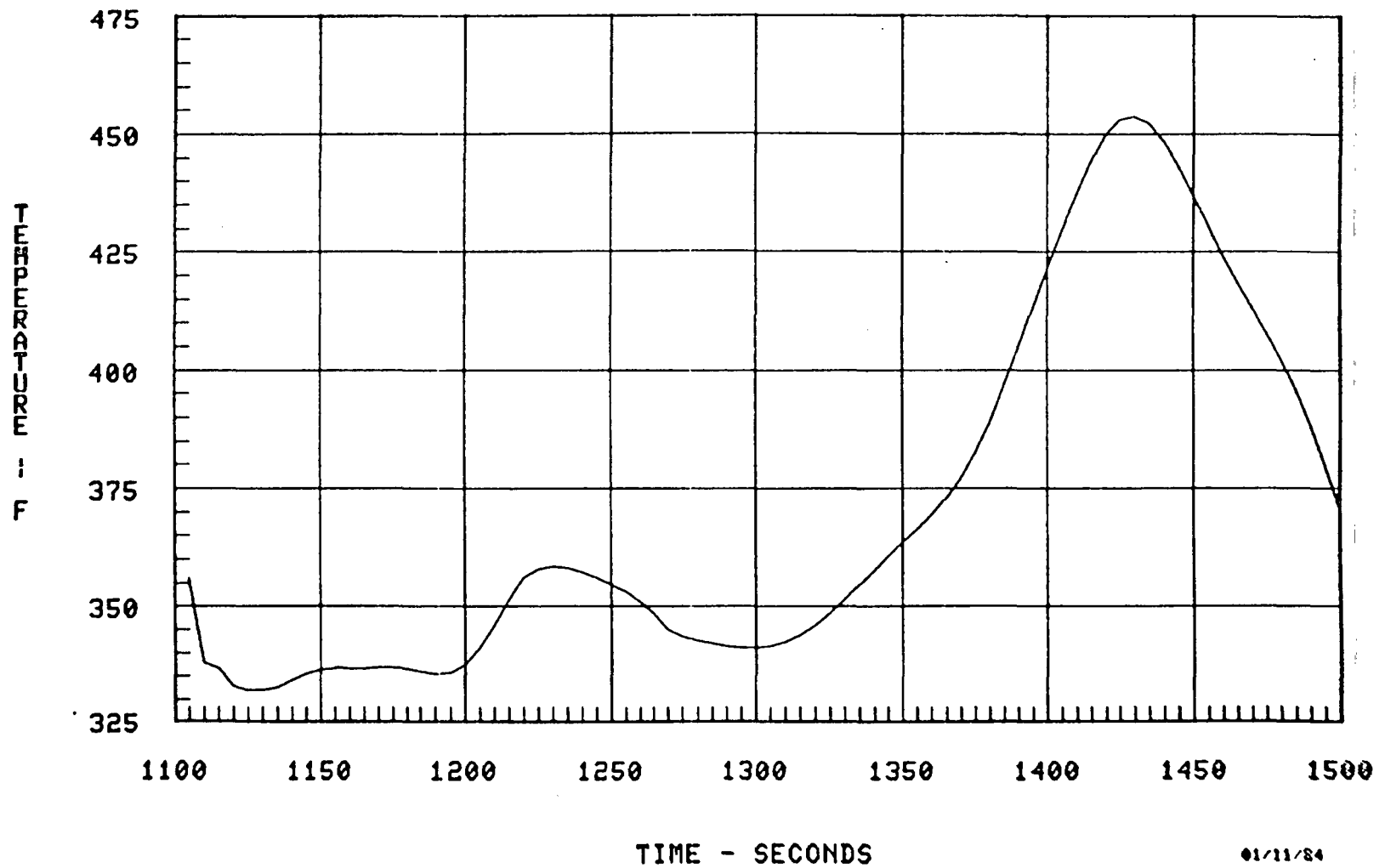


TIME - SECONDS

01/12/84

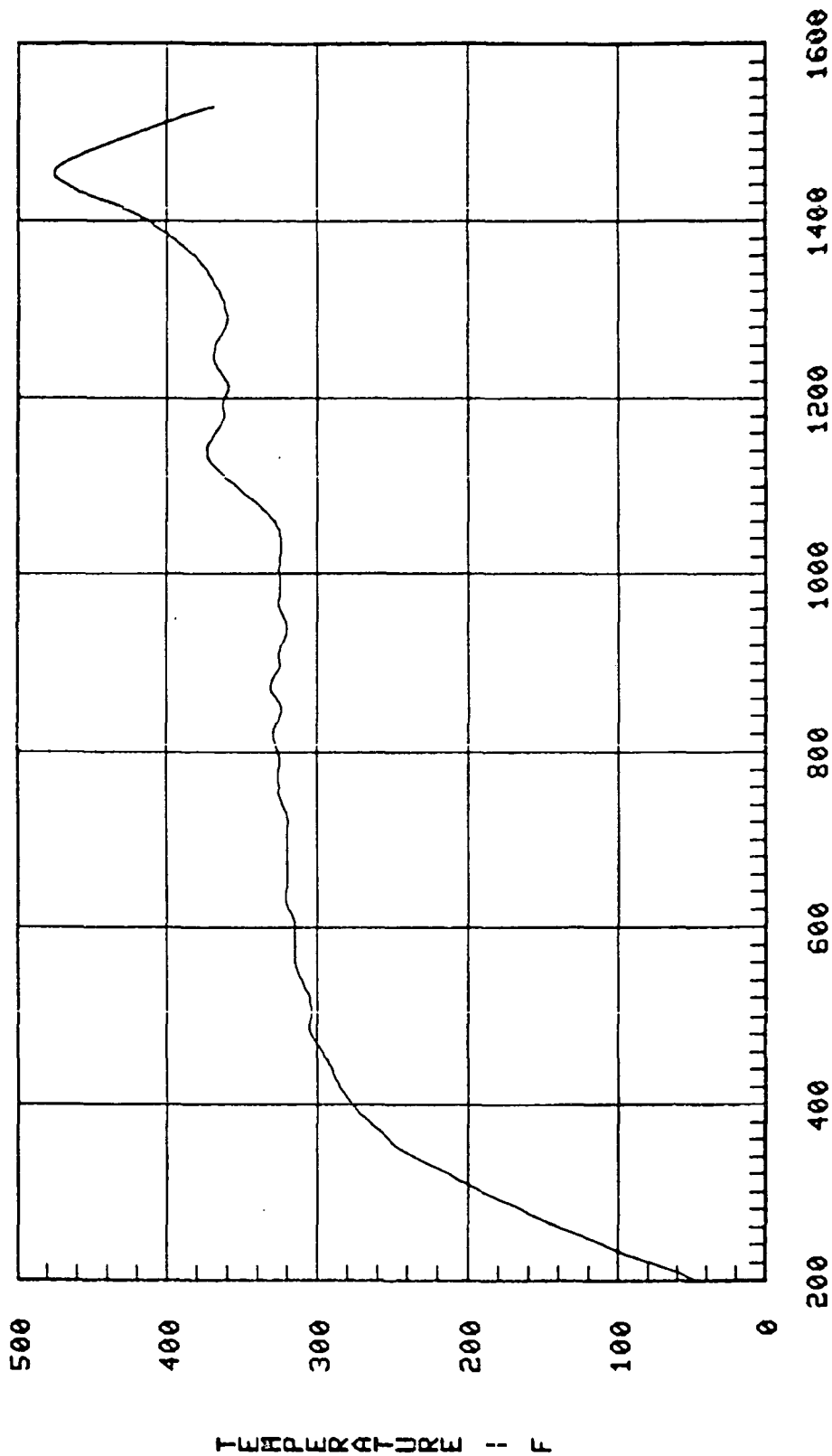
STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A



STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A



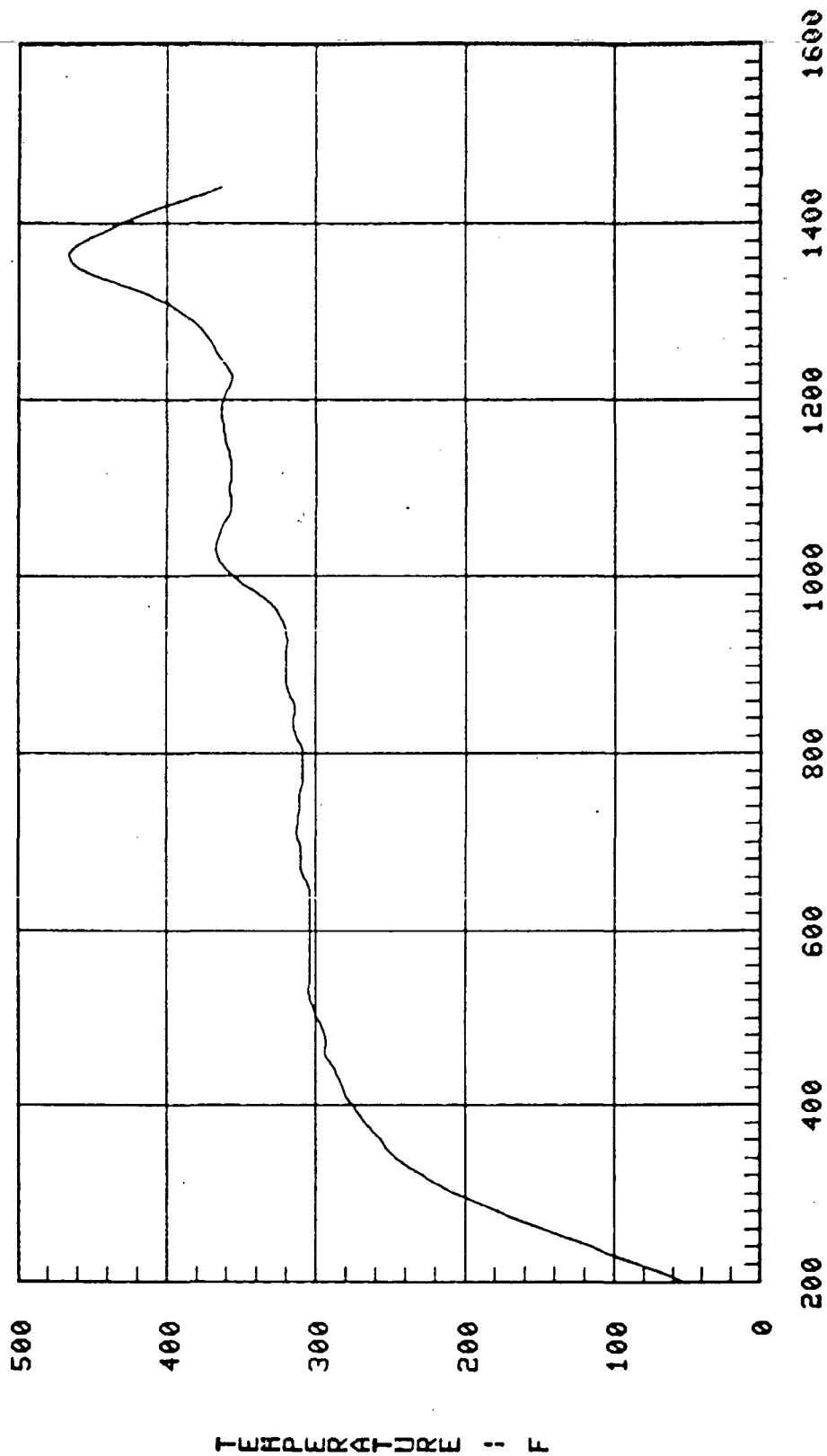
TIME - SECONDS

01/11/84



STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A

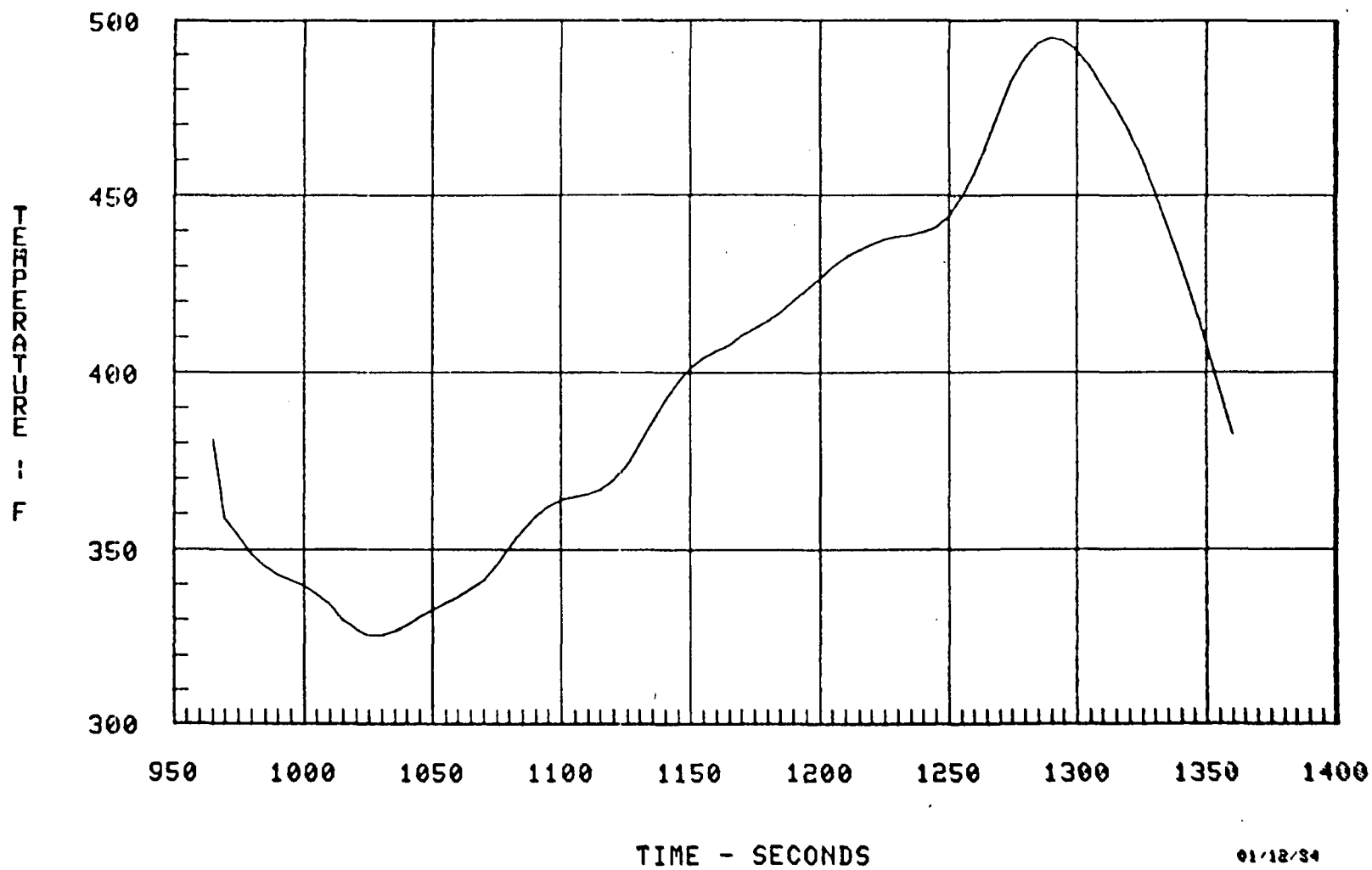


TIME - SECONDS

01/11/34

STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

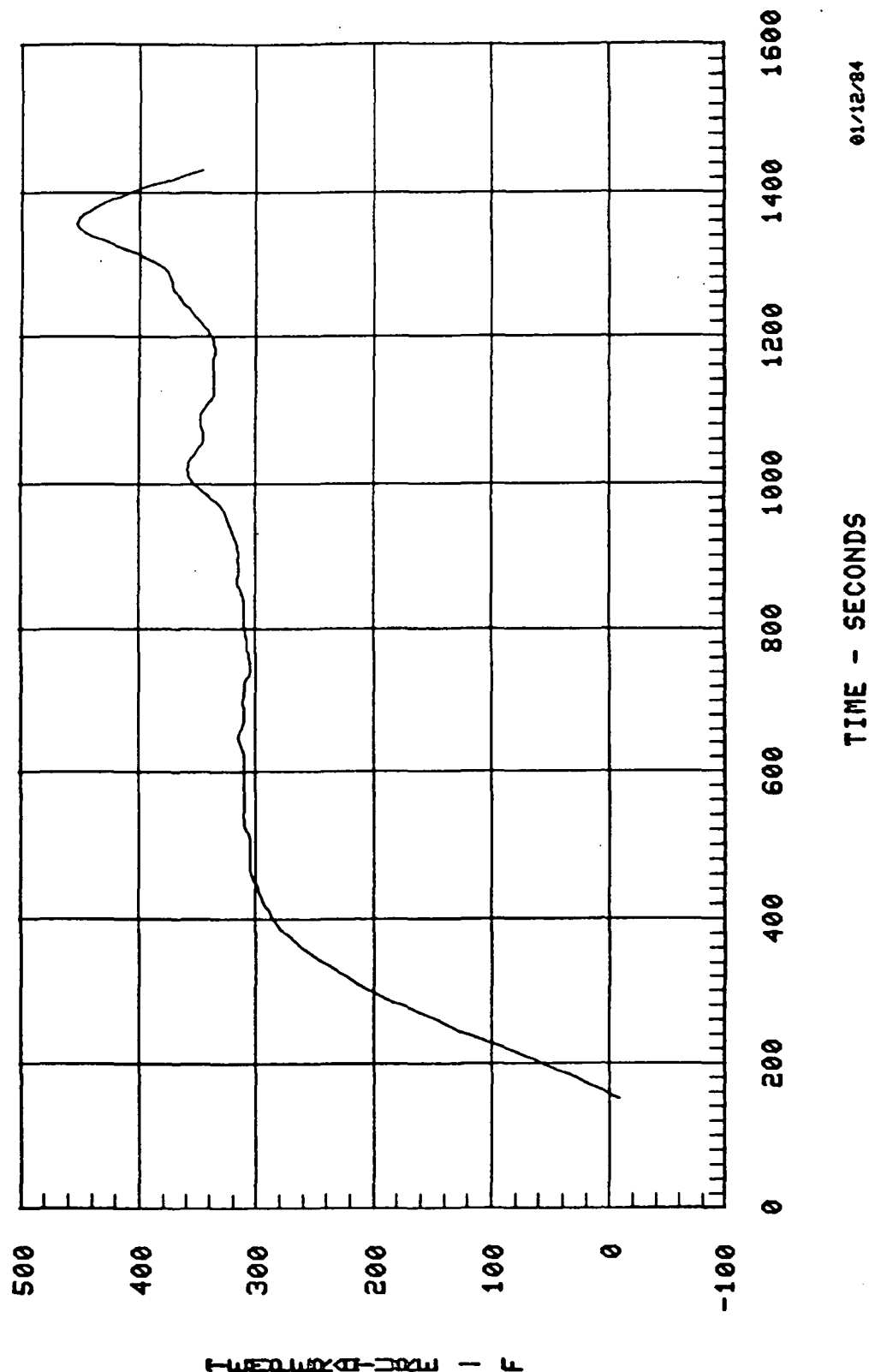
U09T9511A



01/12/34

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.67$ )  $Z=400$

U09T9511A



01/12/84

```

OH74 0.0175 SCALE RE = 0.5 E06
OH74 0.0175 SCALE RE = 1.0 E06
OH74 0.0175 SCALE RE = 1.5 E06
OH74 0.0175 SCALE RE = 2.0 E06
OH74 0.0175 SCALE RE = 2.5 E06
OH74 0.0175 SCALE RE = 3.0 E06
OH74 0.0175 SCALE RE = 3.5 E06
OH74 0.0175 SCALE RE = 3.7 E06

```

○ □ ◇ △ ▽ ☆ + ×

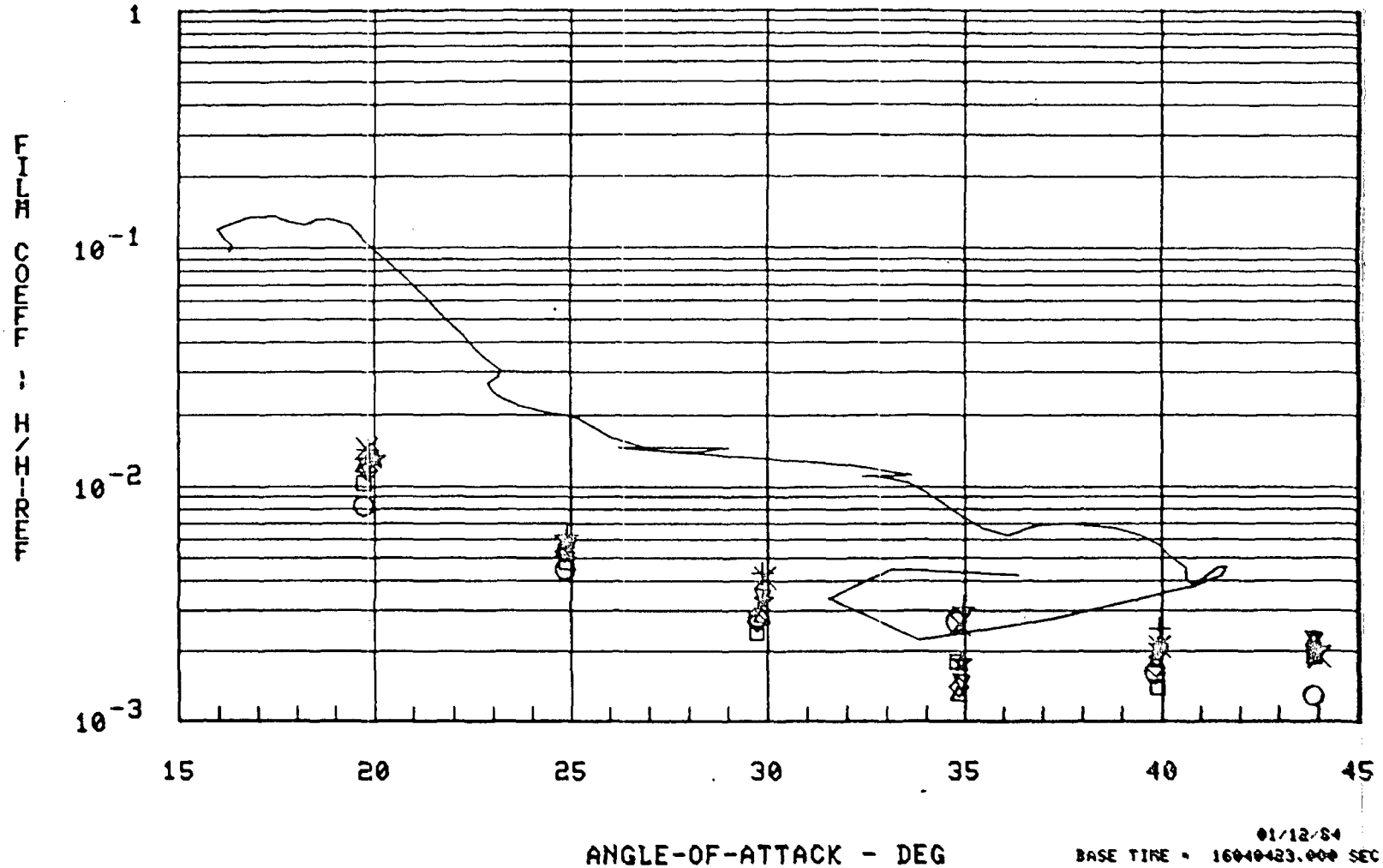


# STS-4 (107 FT LENGTH SIDE FUS X/L=0.70) Z=400

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9238A/H-REF 965-1360 SEC



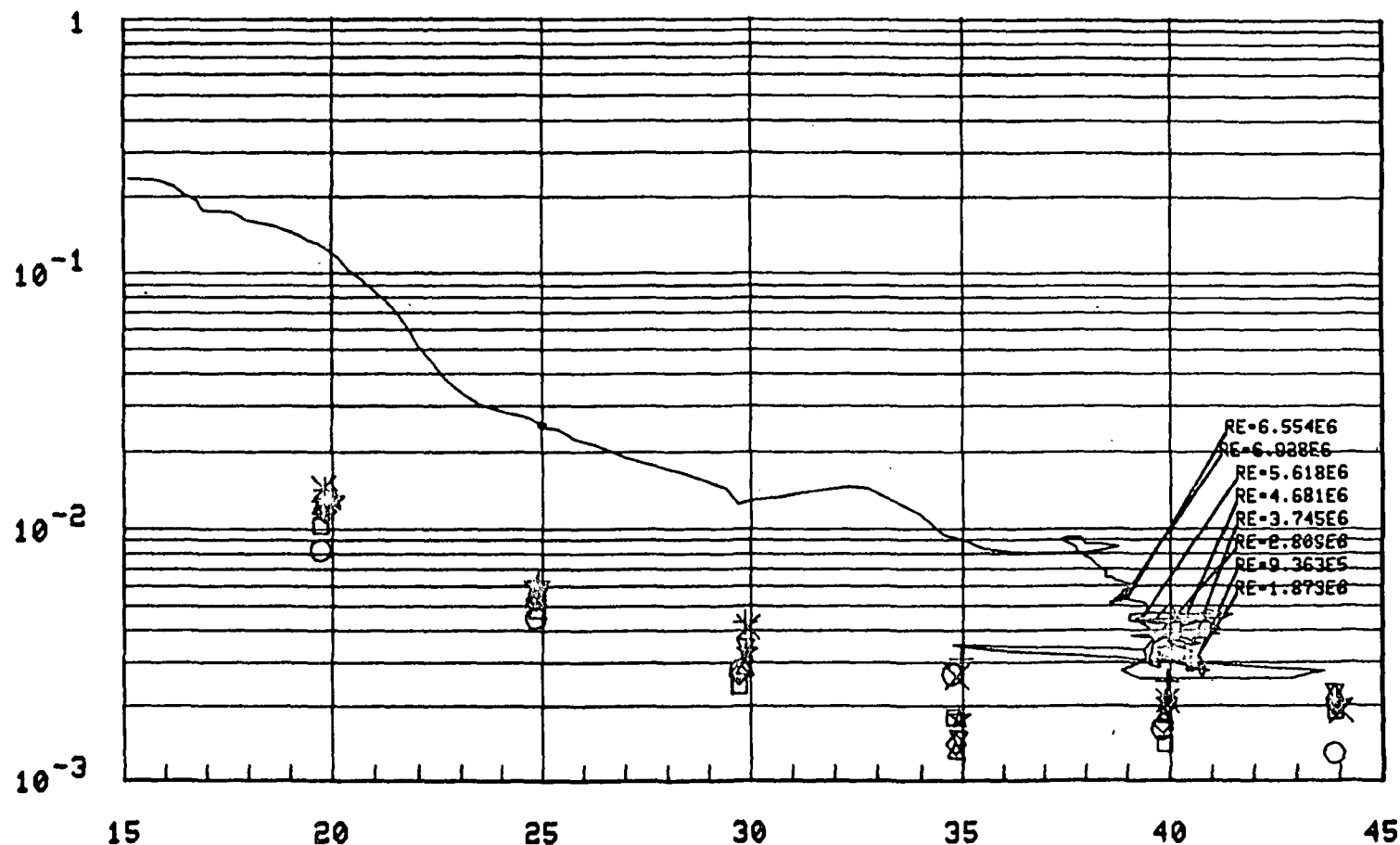
# STS-5 (107 FT LENGTH SIDE FUS X/L=0.70) Z=400

○  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9238A/H-REF 150-1430 SEC

WAVE COEFF - I/I-REF



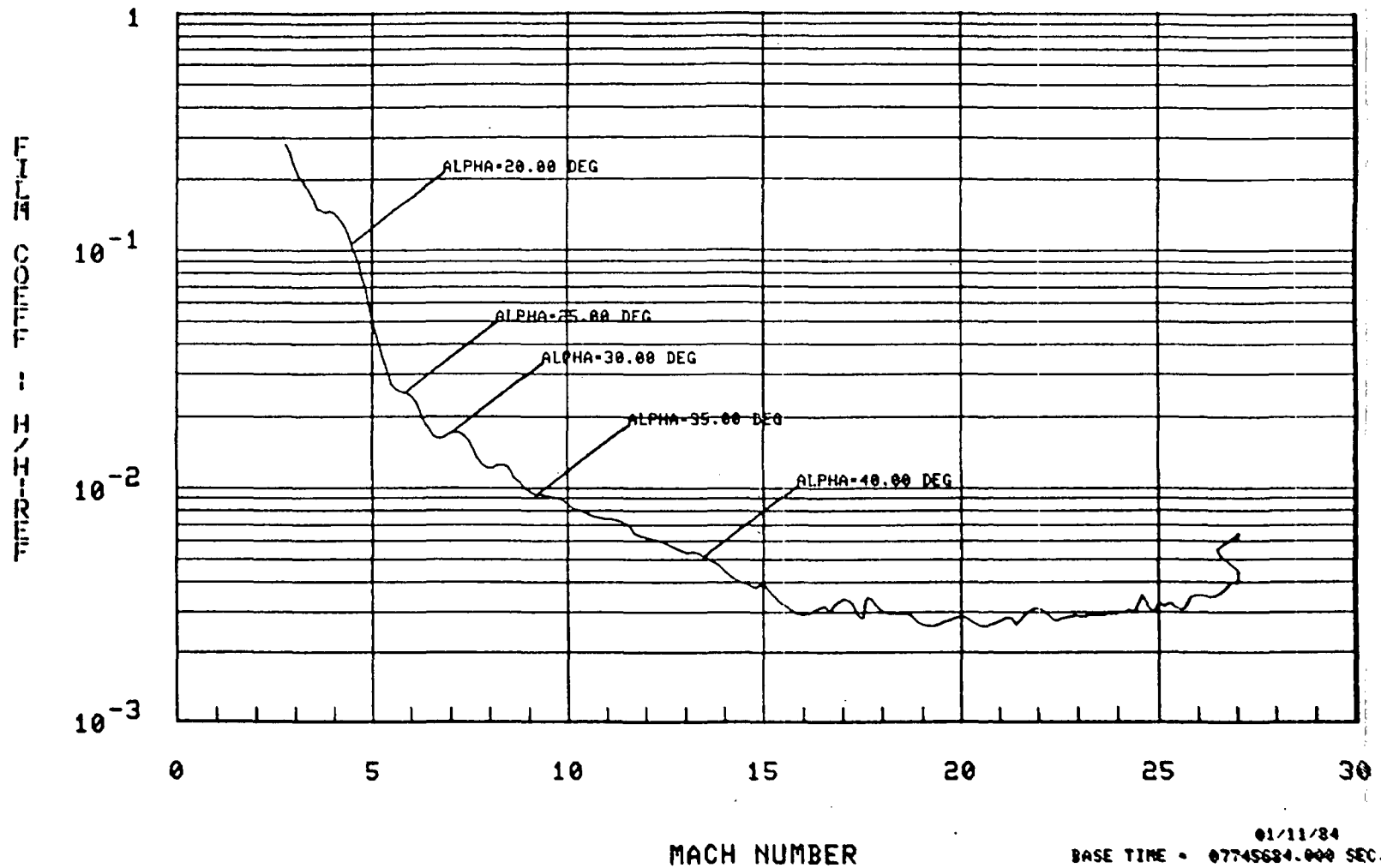
B-293

ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.

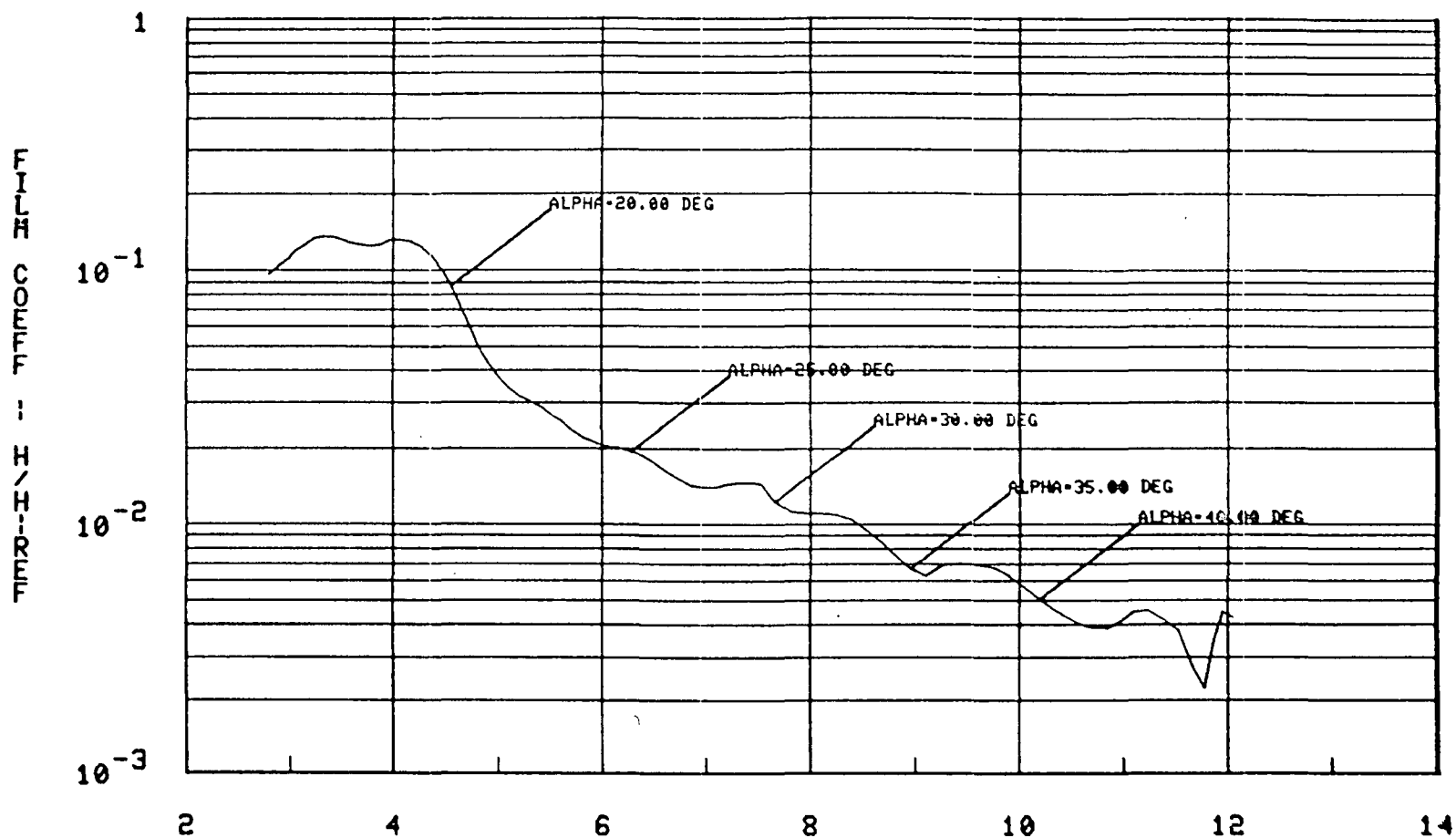
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.70$ ) $Z=400$

U07T9238A/H-REF 200-1440 SEC



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.70$ )  $Z=400$

U07T9238A/H-REF 965-1360 SEC



B-295

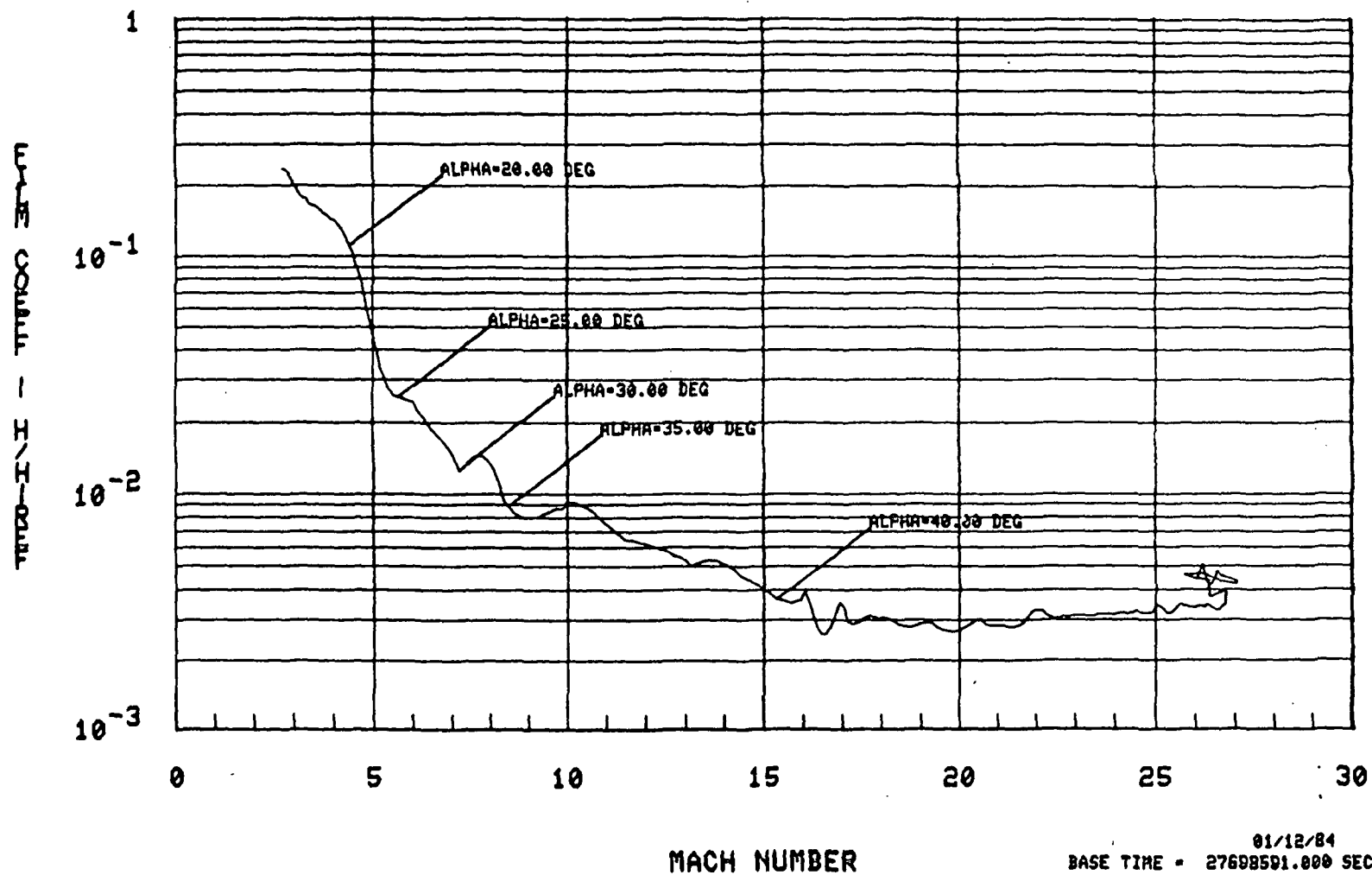
MACH NUMBER

01/12/84  
BASE TIME = 16040423.000 SEC.



# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.70$ ) $Z=400$

U07T9238A/H-REF 150-1430 SEC

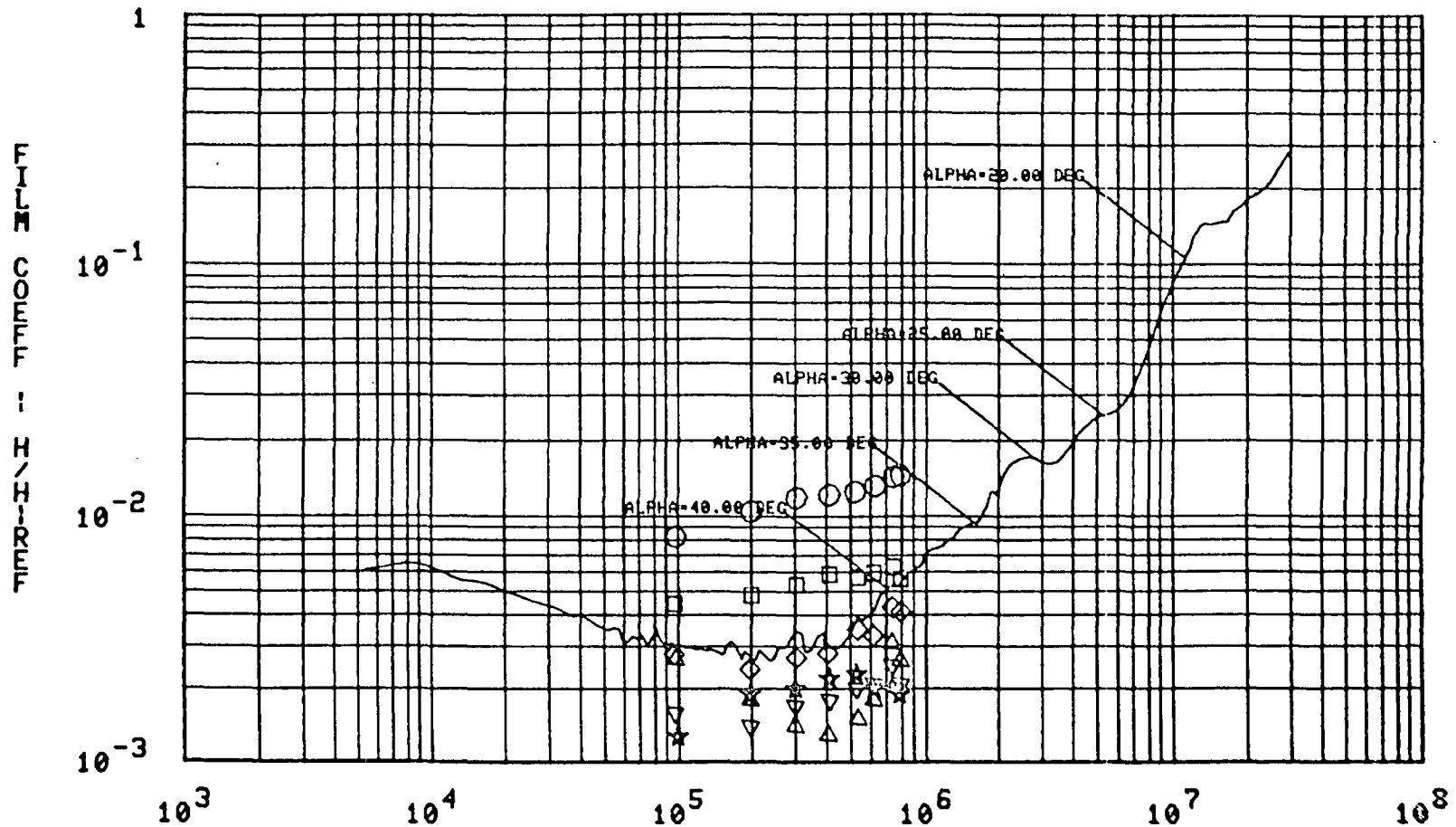


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.70$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9238A/H-REF 200-1440 SEC



B-297

REYNOLDS NUMBER (NS)

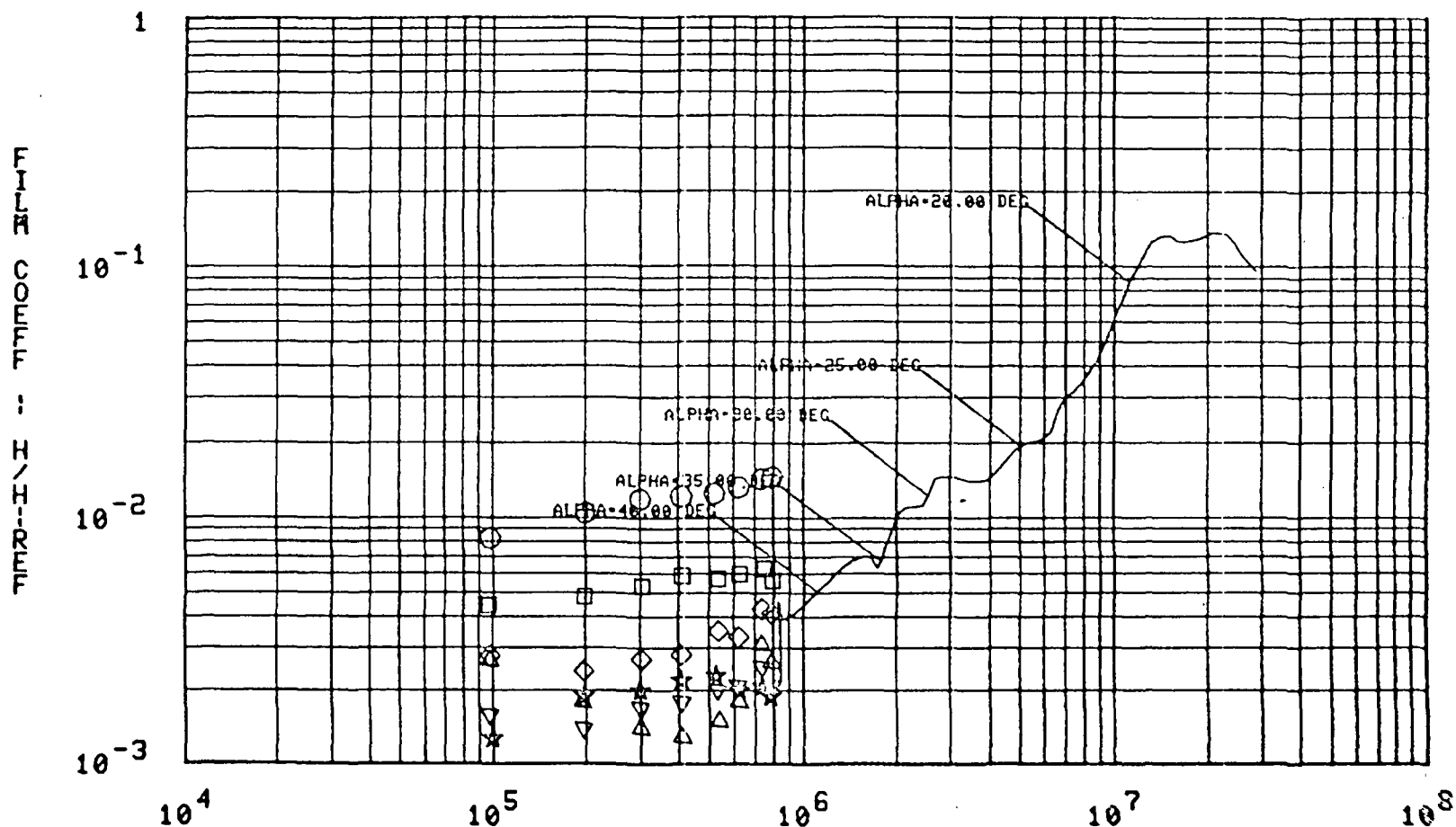
01/11/84  
BASE TIME • 07745634.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.70$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9238A/H-REF 965-1360 SEC



B-298

REYNOLDS NUMBER (NS)

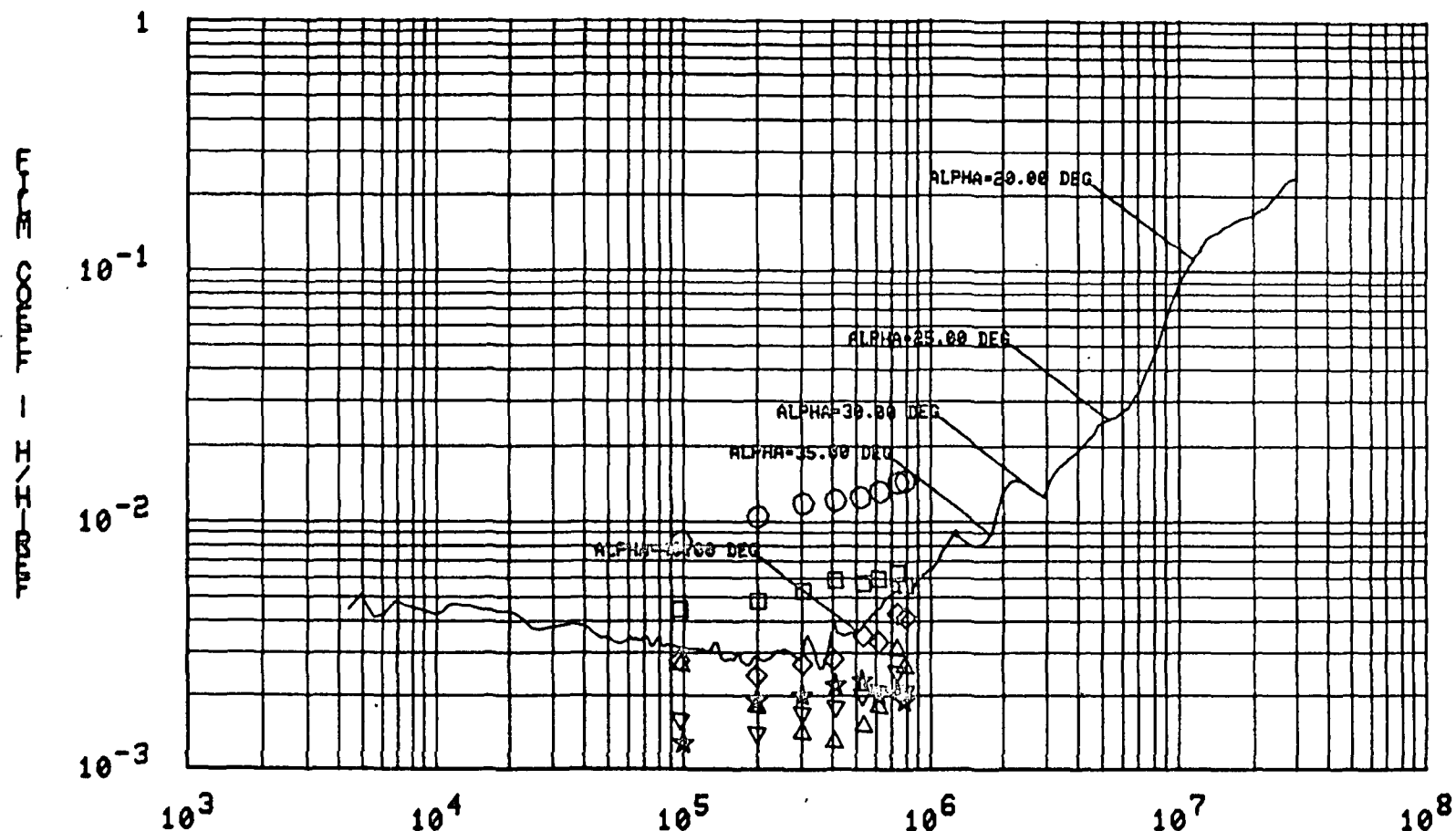
01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.70$ ) $Z=400$

○  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9238A/H-REF 150-1430 SEC



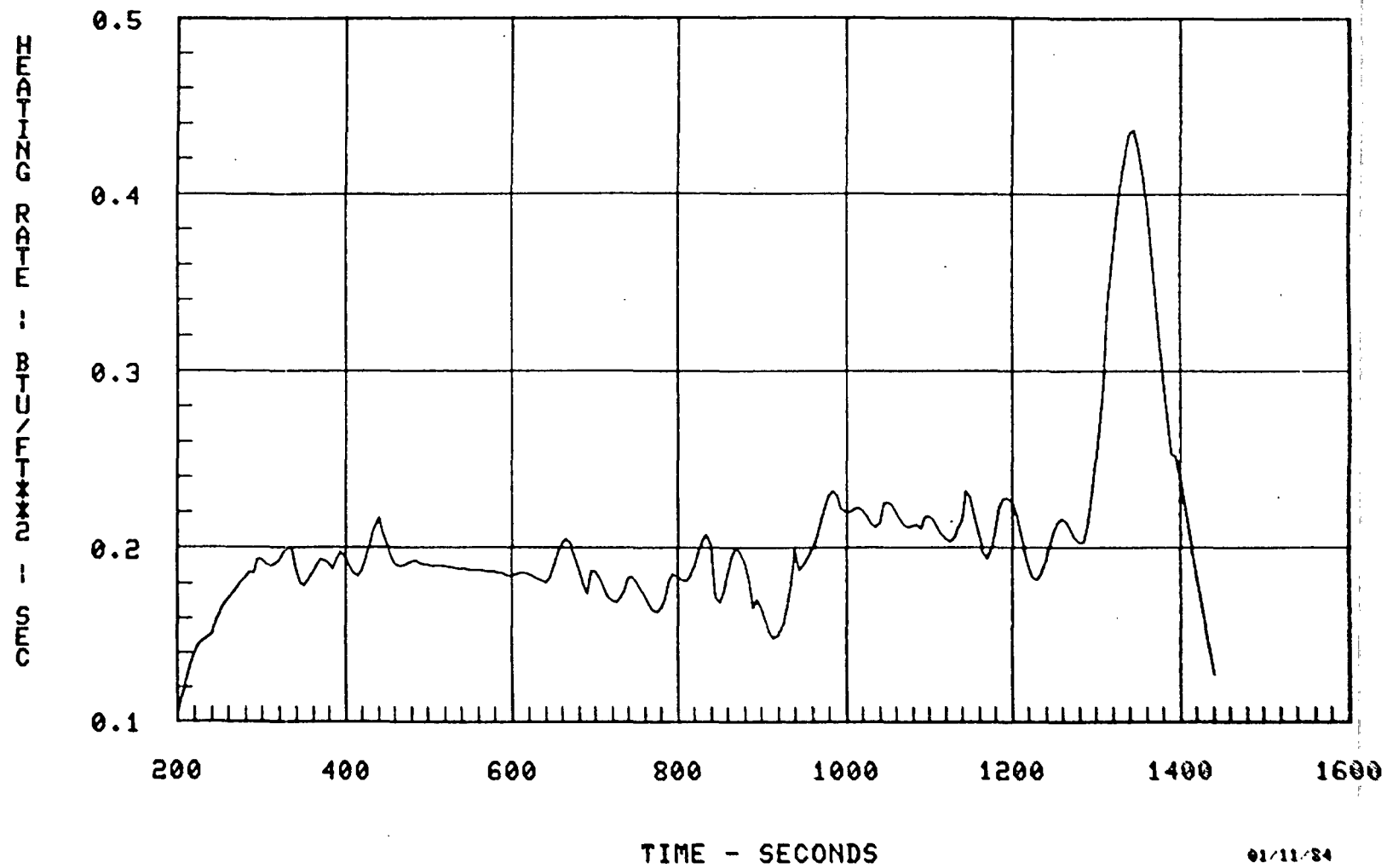
B-299

REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

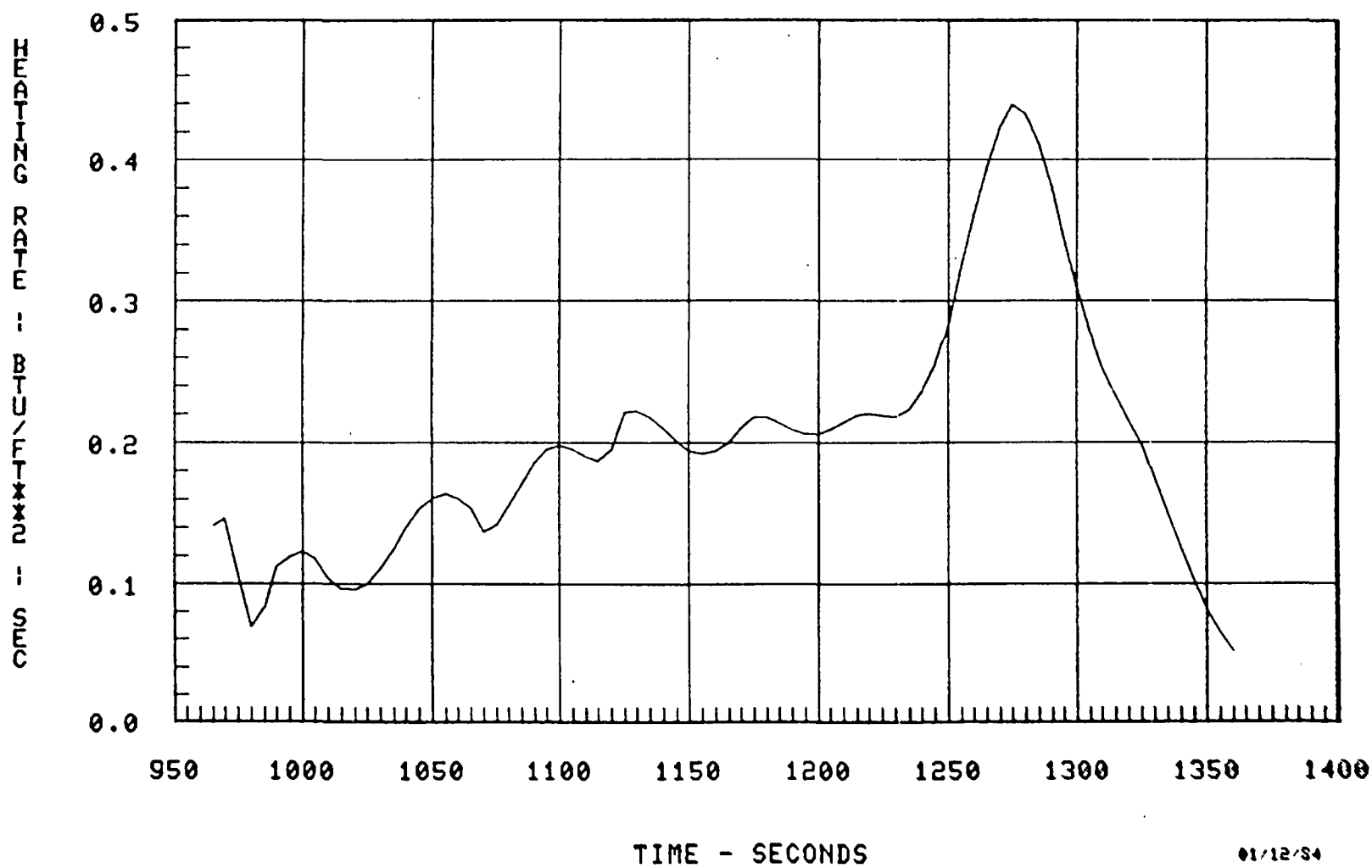
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.70$ )  $Z=400$

U07T9238A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.70$ )  $Z=400$

U07T9238A

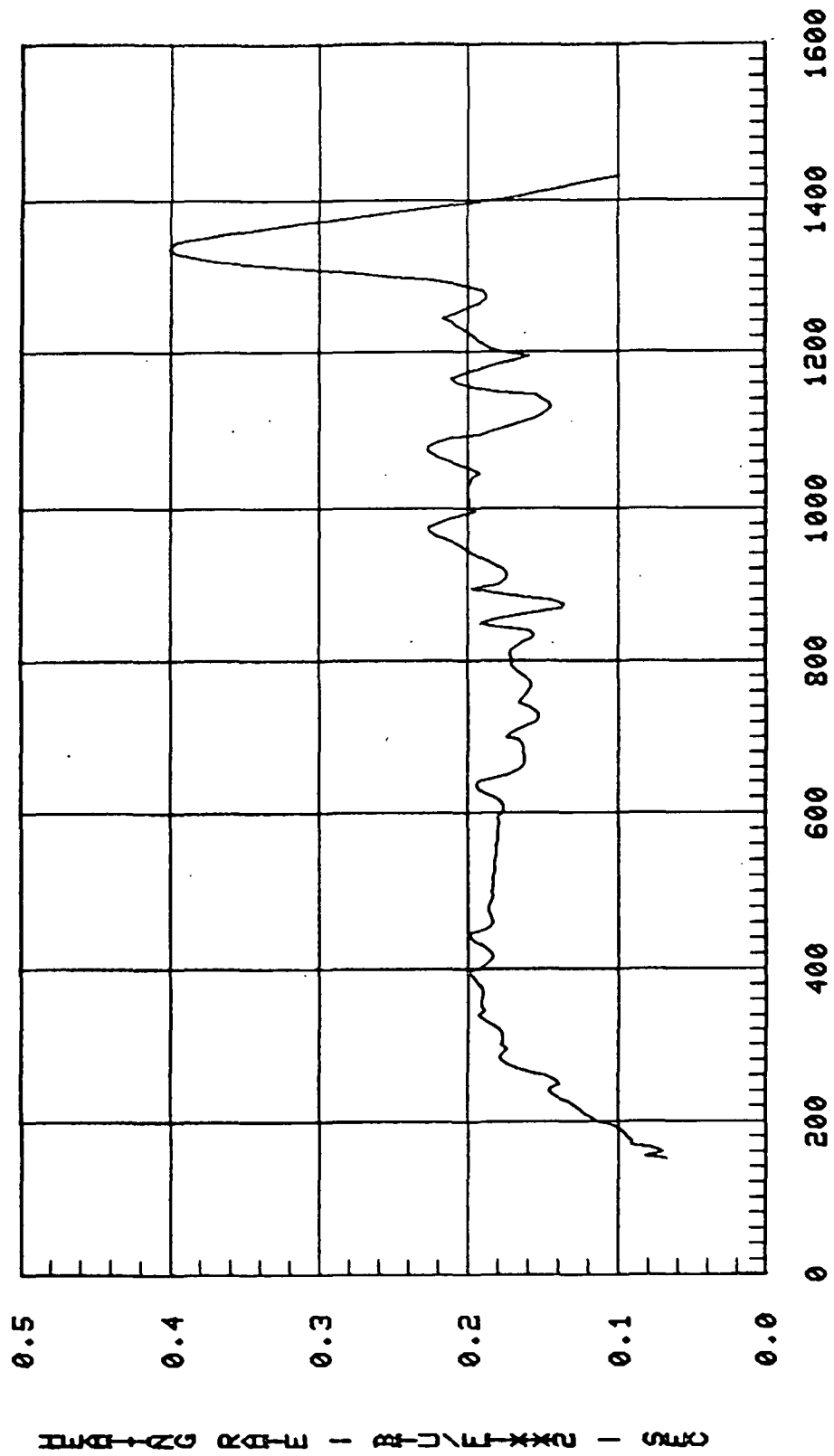


B-301

01/12/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.70$ )  $Z=400$

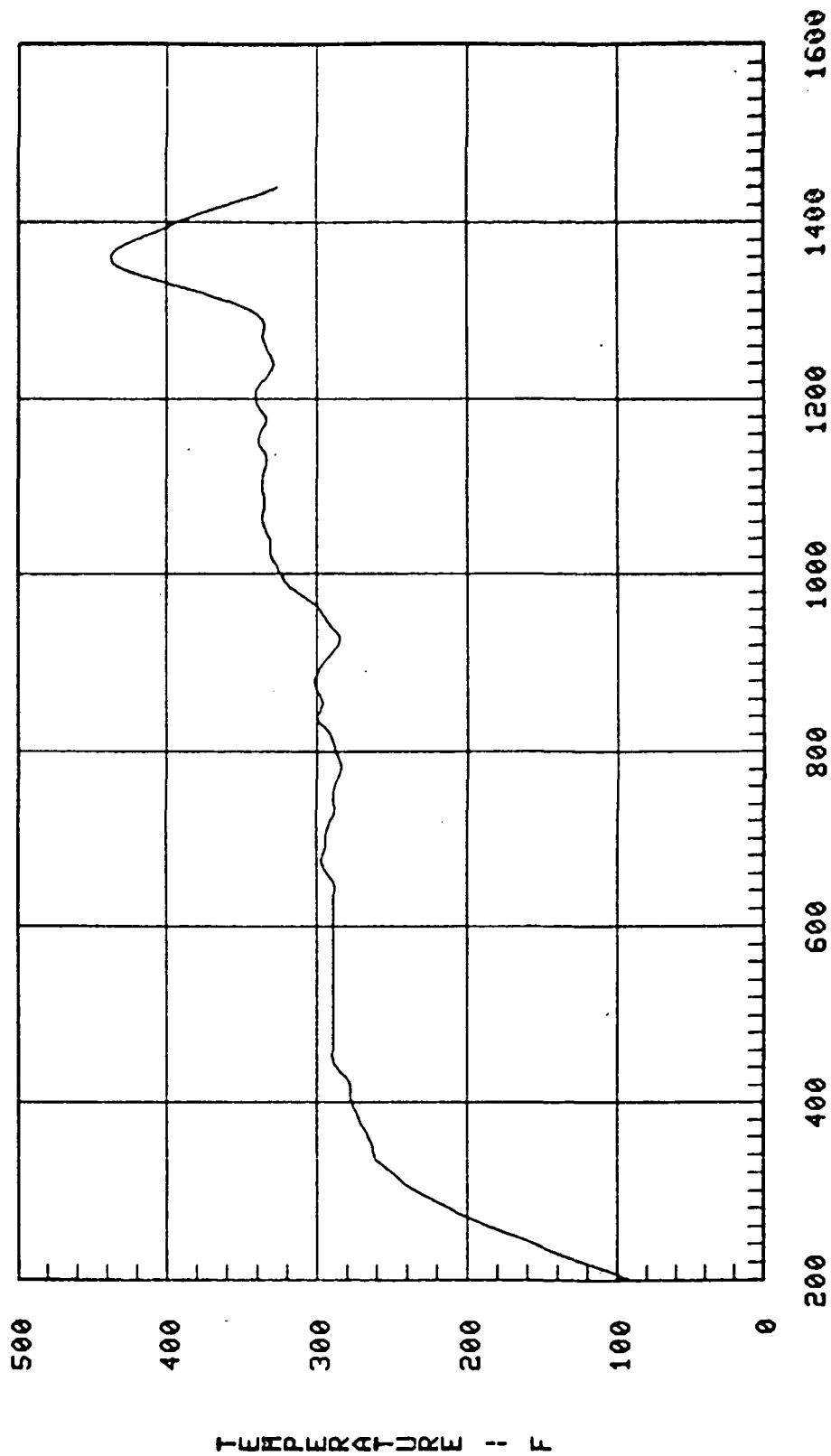
U07T9238A



01/12/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.70$ ) Z=400

U07T9238A

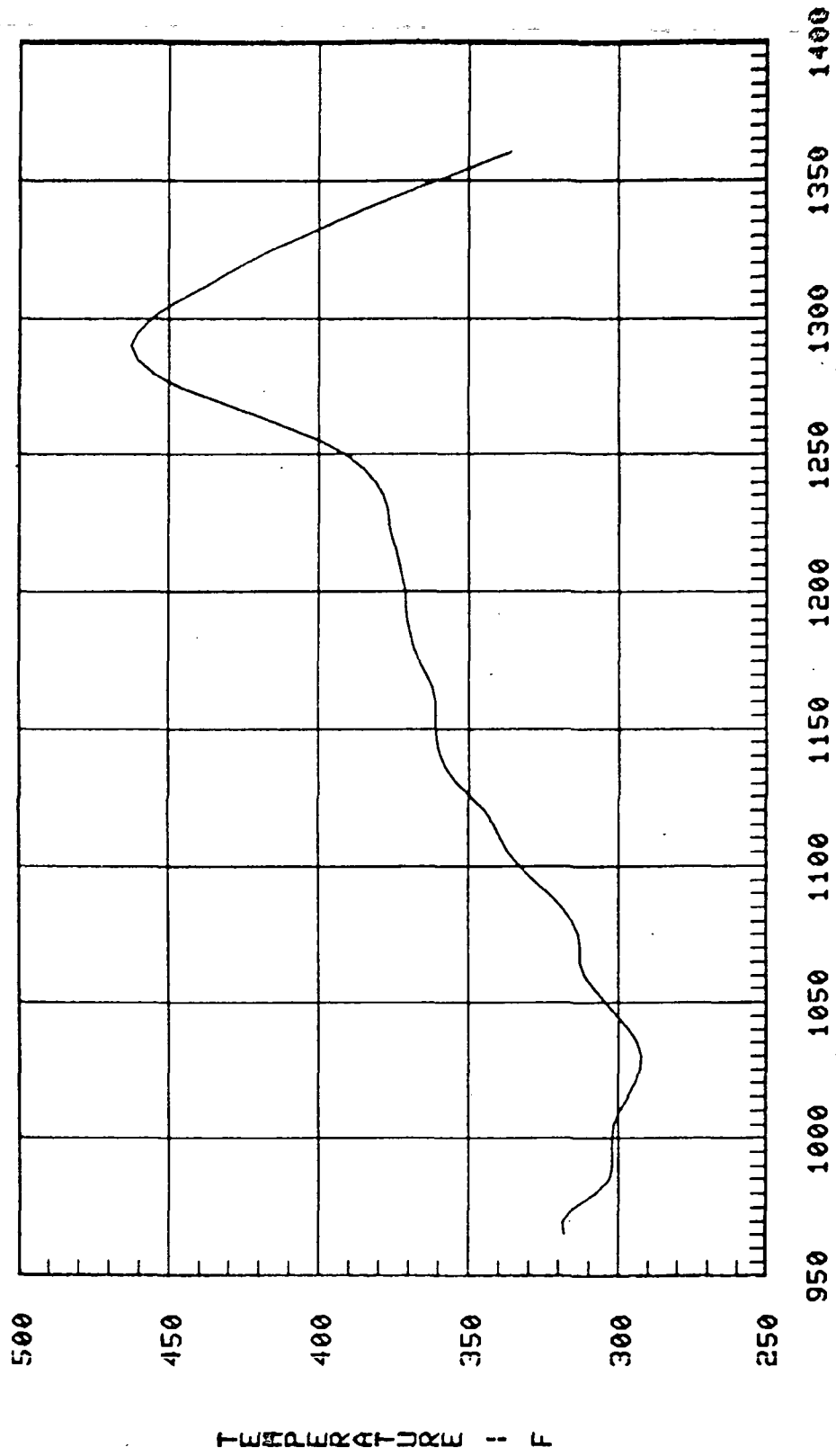


01/11/84



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.70$ )  $Z=400$

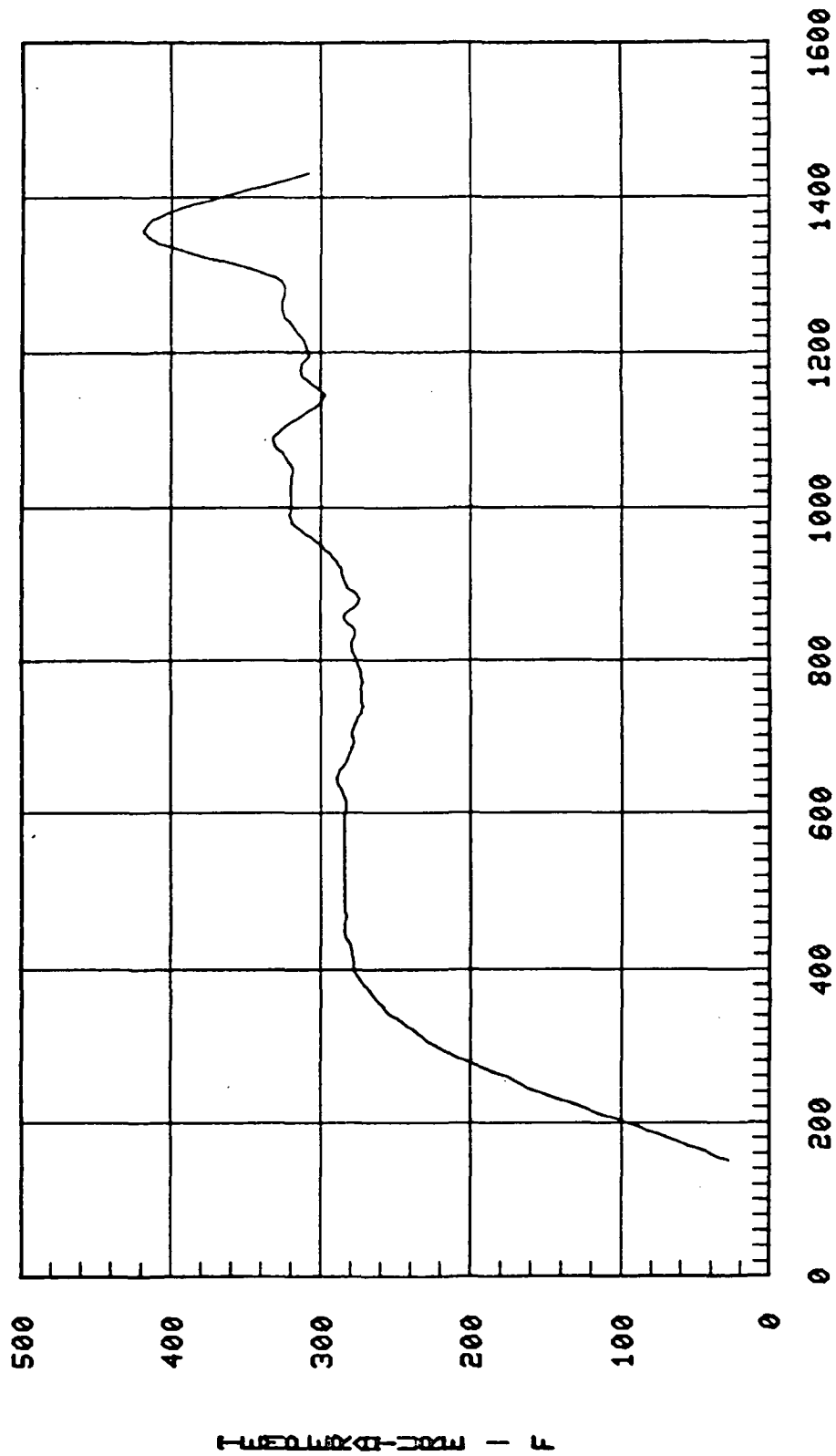
U07T9238A



01/18/84

STS-5 (107 FT LENGTH SIDE FUS X/L=0.70) Z=400

U07T9238A



TIME - SECONDS

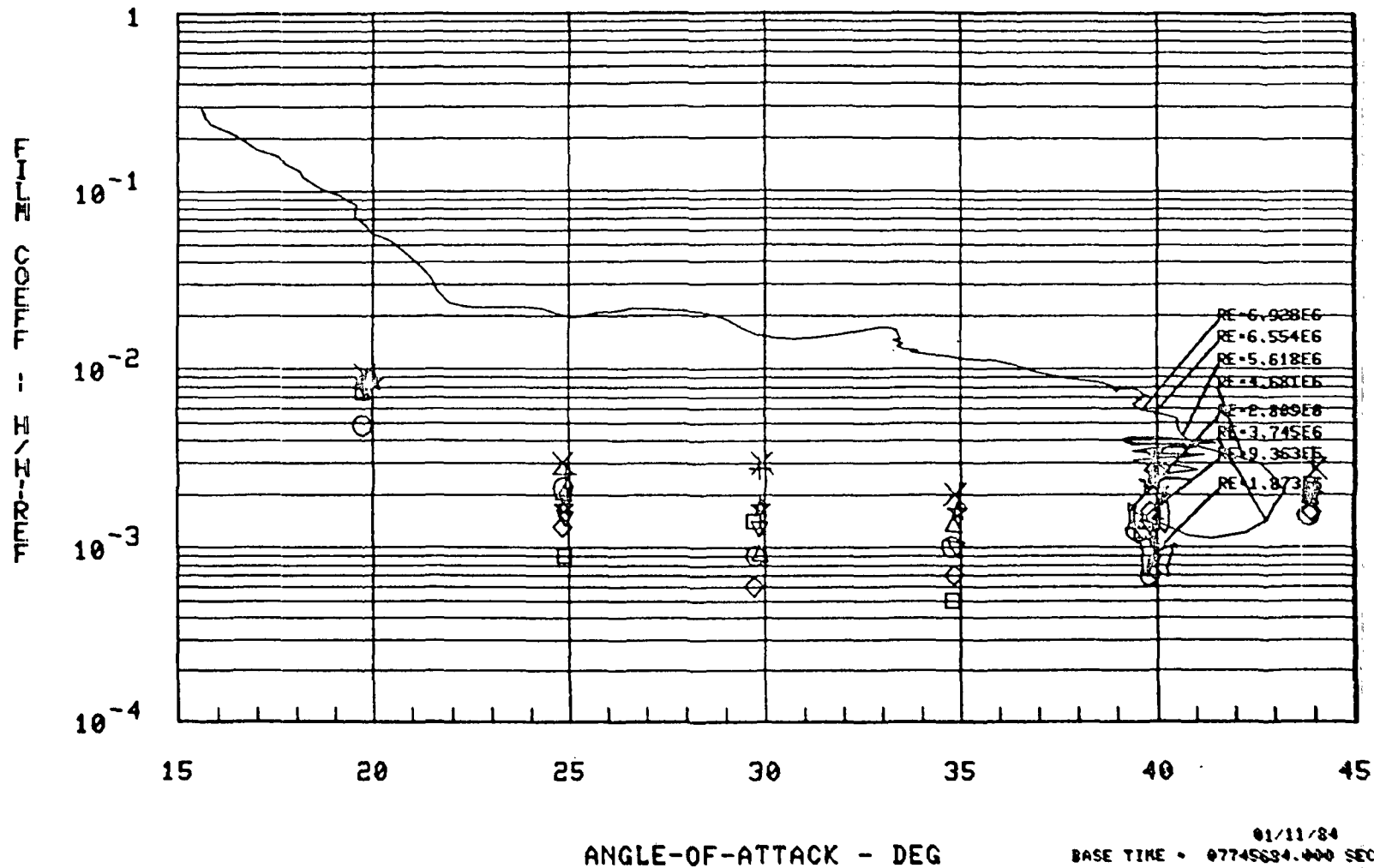
01/18/84

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.80$ ) $Z=400$

○  
□  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9242A/H-REF 200-1440 SEC



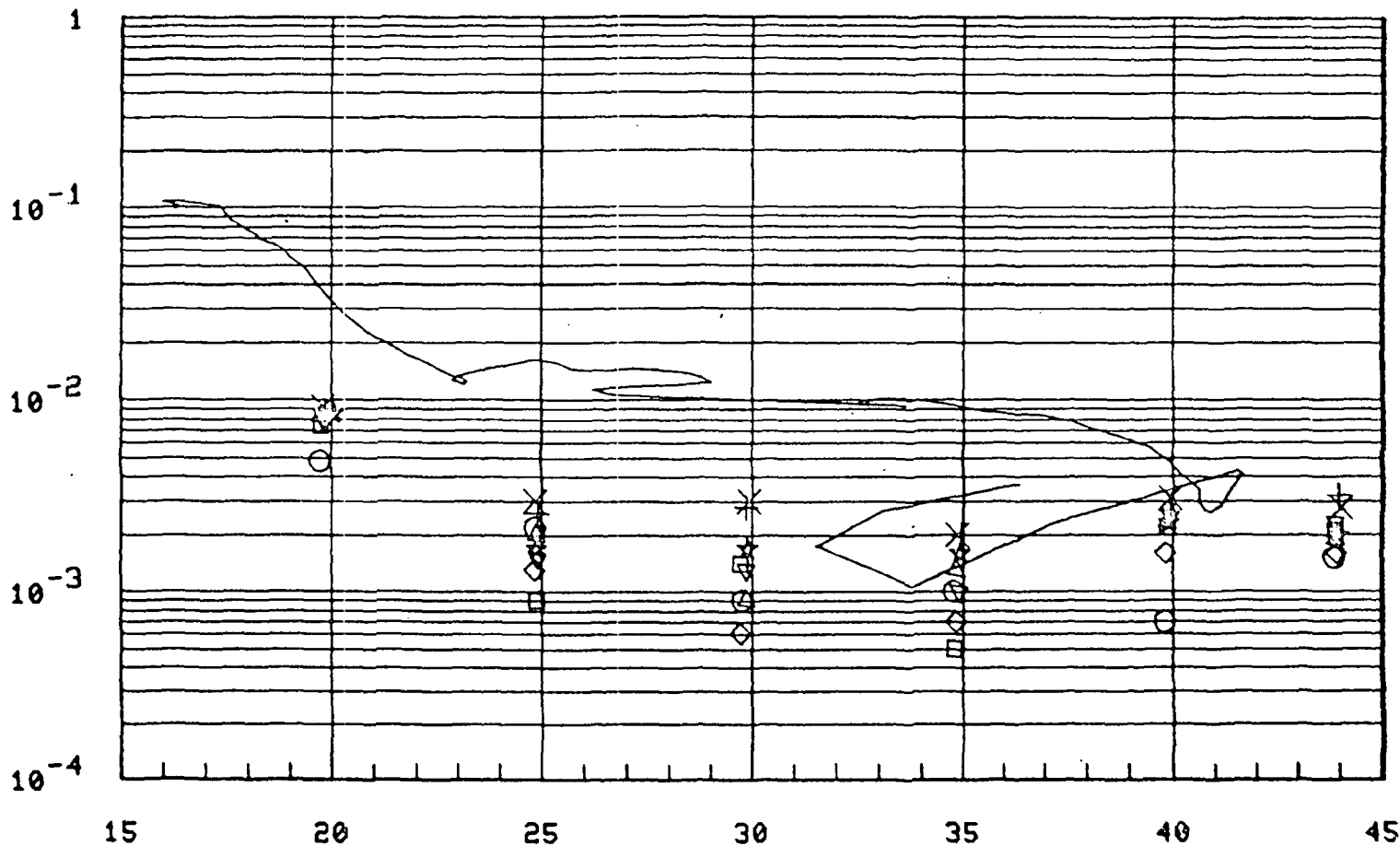
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.80$ ) $Z=400$

○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9242A/H-REF 965-1360 SEC

FILE COUNT -- IN-IN-REF



ANGLE-OF-ATTACK - DEG

01/12/84  
 BASE TIME = 16040423.000 SEC.

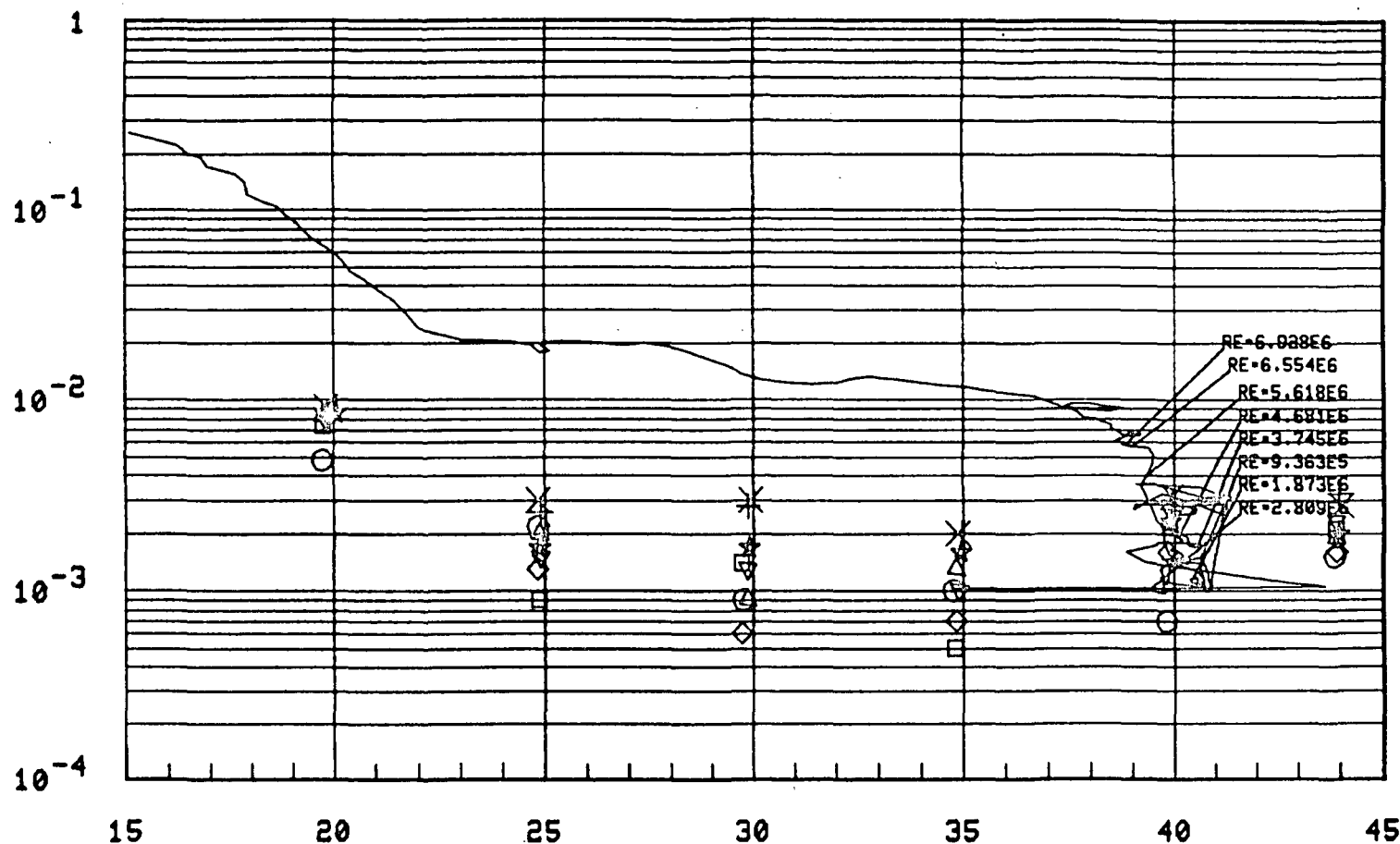
# STS-5 (107 FT LENGTH SIDE FUS X/L=0.80) Z=400

OH74 0.0175 SCALE RE • 0.5 E06  
 OH74 0.0175 SCALE RE • 1.0 E06  
 OH74 0.0175 SCALE RE • 1.5 E06  
 OH74 0.0175 SCALE RE • 2.0 E06  
 OH74 0.0175 SCALE RE • 2.5 E06  
 OH74 0.0175 SCALE RE • 3.0 E06  
 OH74 0.0175 SCALE RE • 3.5 E06  
 OH74 0.0175 SCALE RE • 3.7 E06

U07T9242A/H-REF 150-1430 SEC

○  
◇  
△  
+  
X

WAVE COEFF - I/I-0000

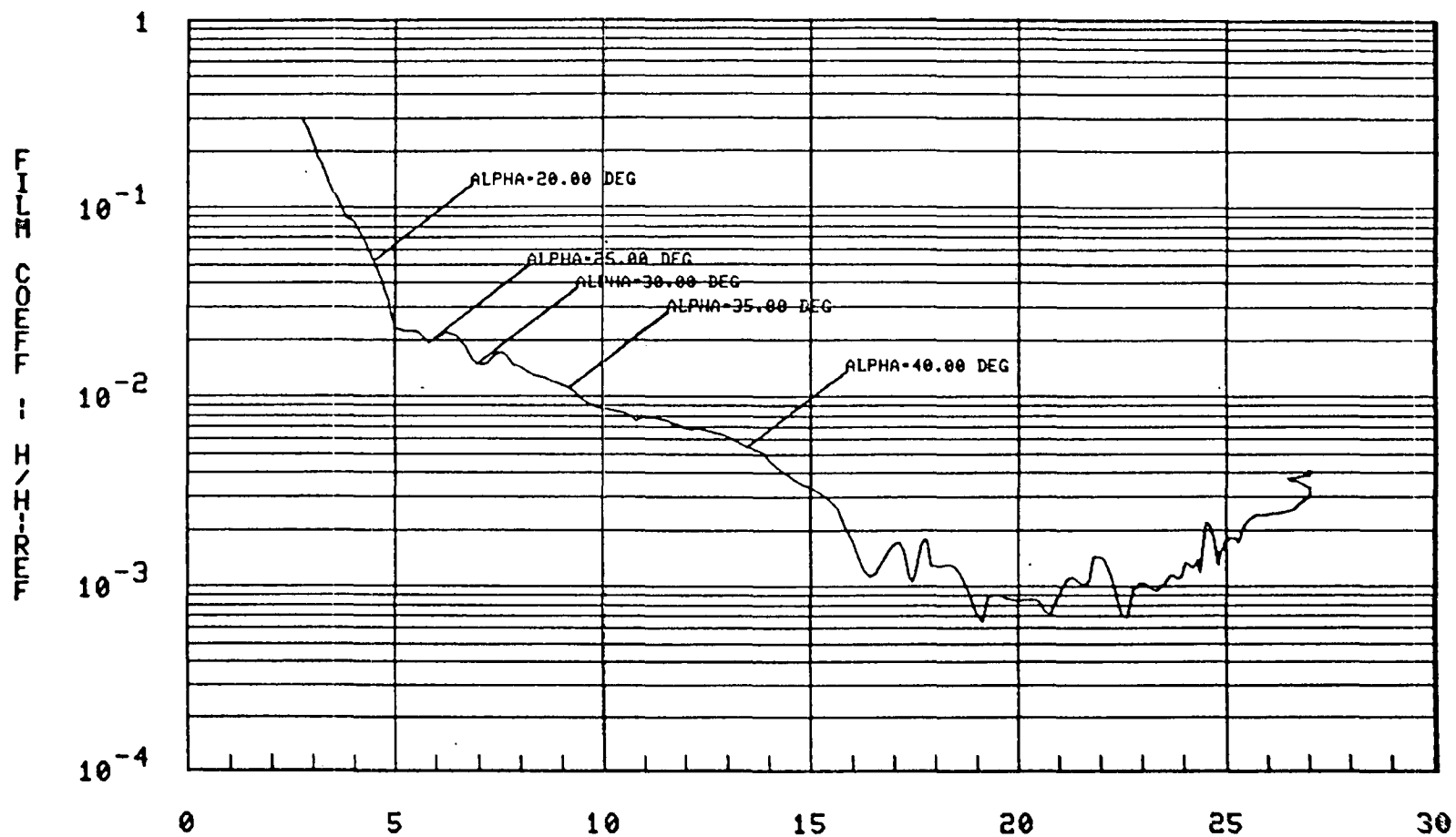


ANGLE-OF-ATTACK - DEG

01/12/84  
 BASE TIME • 27698591.000 SEC.

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.80$ )  $Z=400$

U07T9242A/H-REF 200-1440 SEC

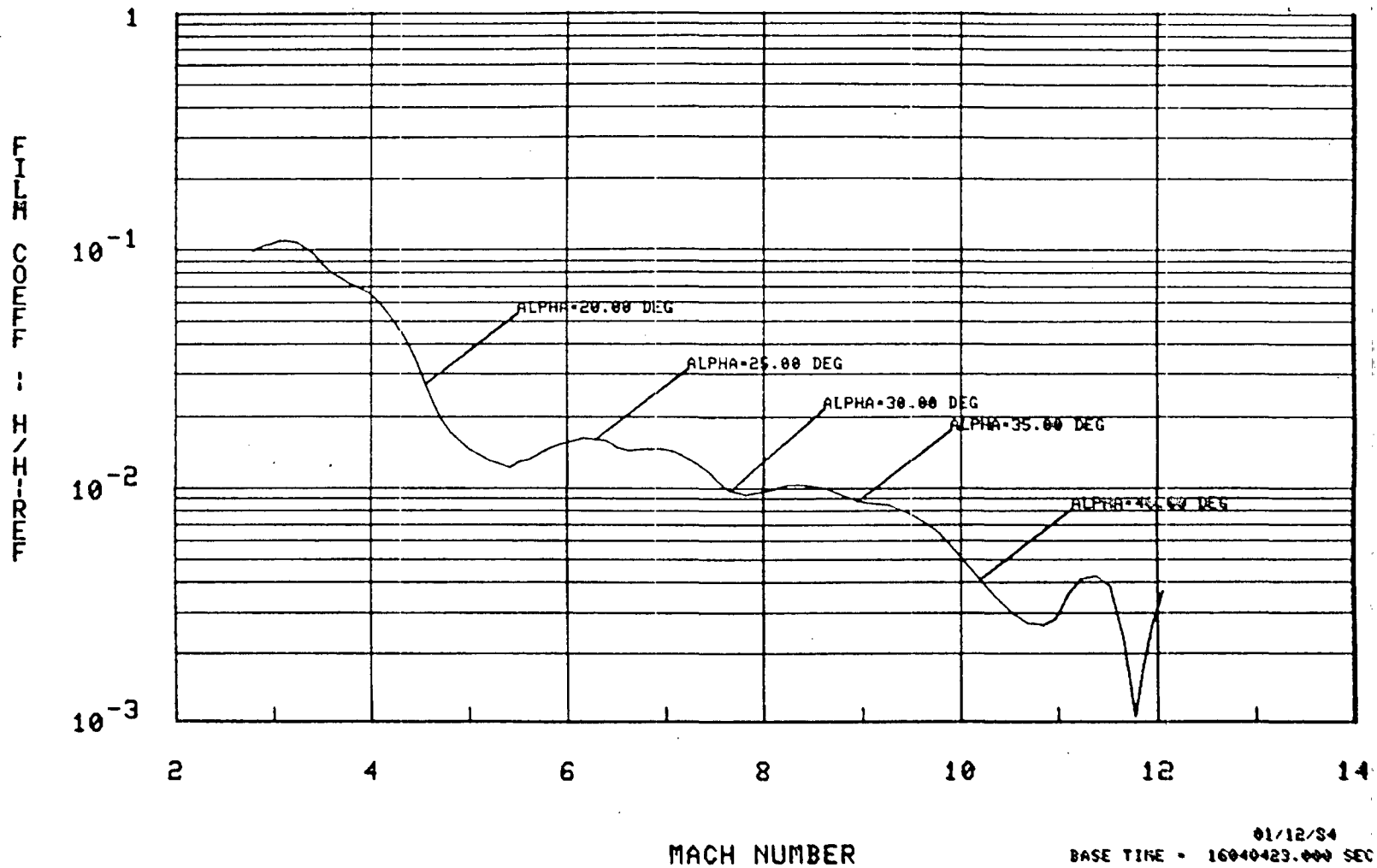


MACH NUMBER

01/11/84  
BASE TIME • 07745684.000 SEC.

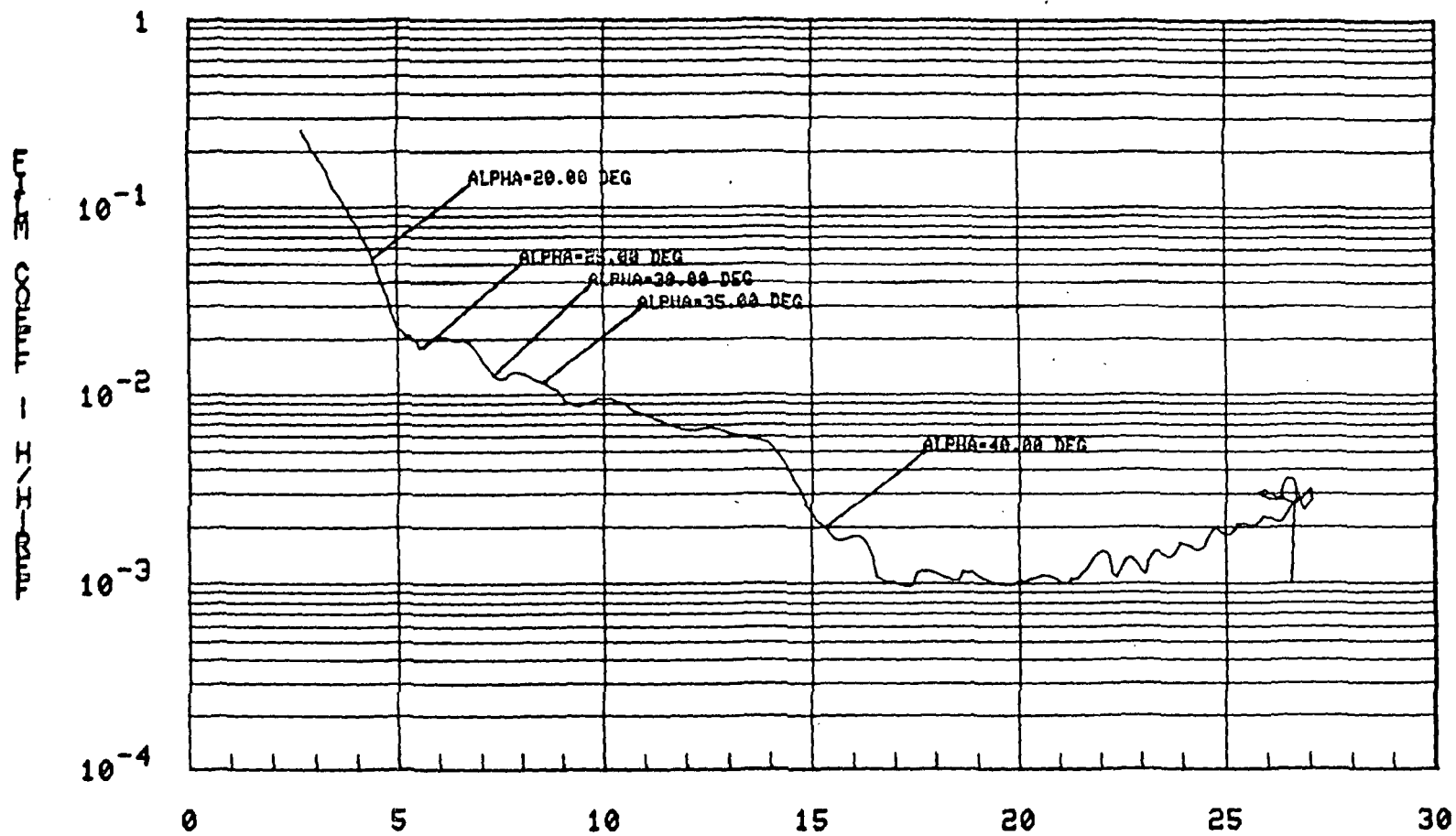
STS-4 (107 FT LENGTH, SIDE FUS X/L=0.80) Z=400

U07T9242A/H-REF 965-1360 SEC



STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.80$ )  $Z=400$

U07T9242A/H-REF 150-1430 SEC



MACH NUMBER

01/12/84  
BASE TIME = 27698591.000 SEC.



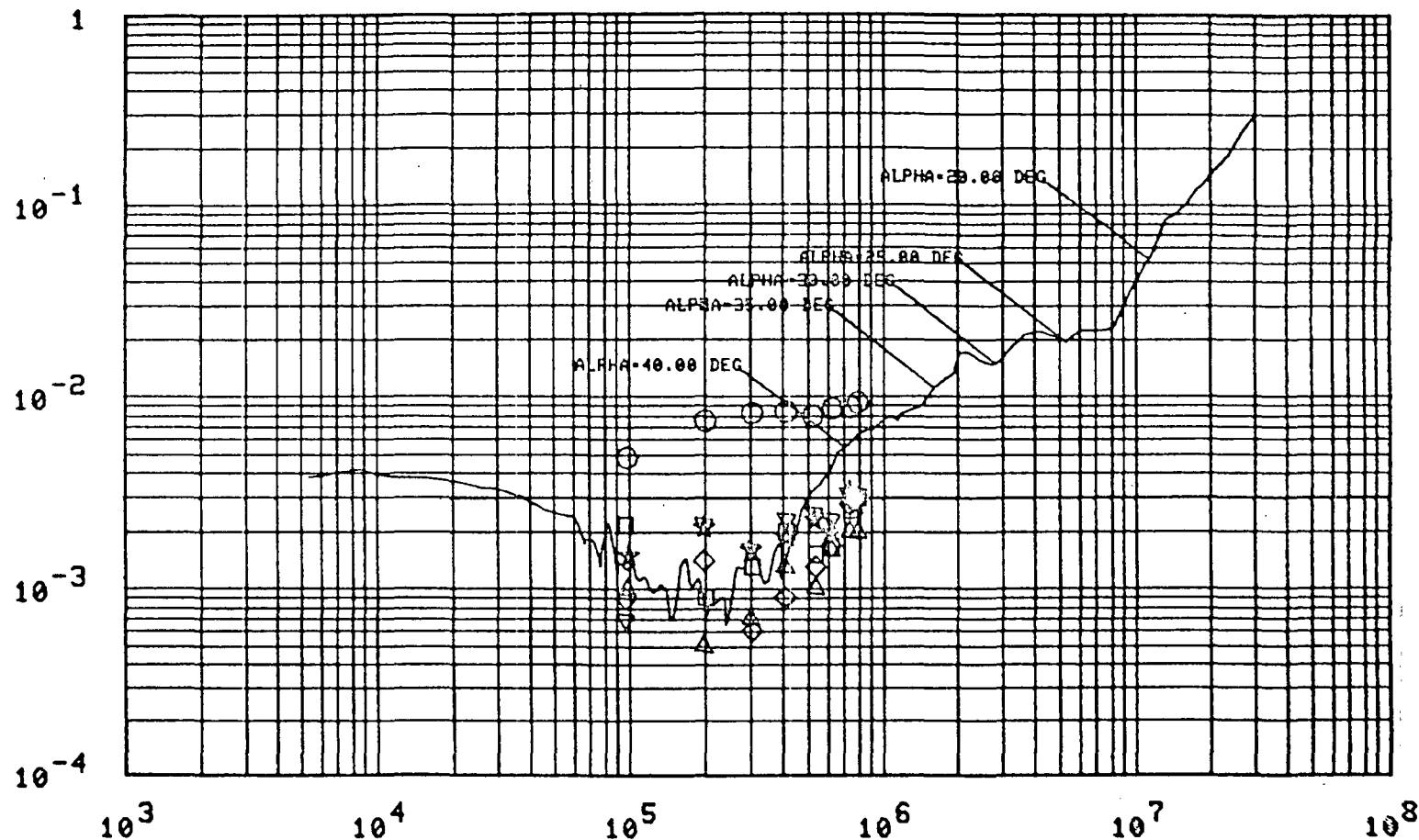
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.80$ ) $Z=400$

○  
◇  
□  
△  
▽  
★

CH74 ALPHA = 20 DEGREES  
CH74 ALPHA = 25 DEGREES  
CH74 ALPHA = 30 DEGREES  
CH74 ALPHA = 35 DEGREES  
CH74 ALPHA = 40 DEGREES  
CH74 ALPHA = 44 DEGREES

U07T9242A/H-REF 200-1440 SEC

FILE CODE : H/H-REF



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 07745684.040 SEC.

B-312

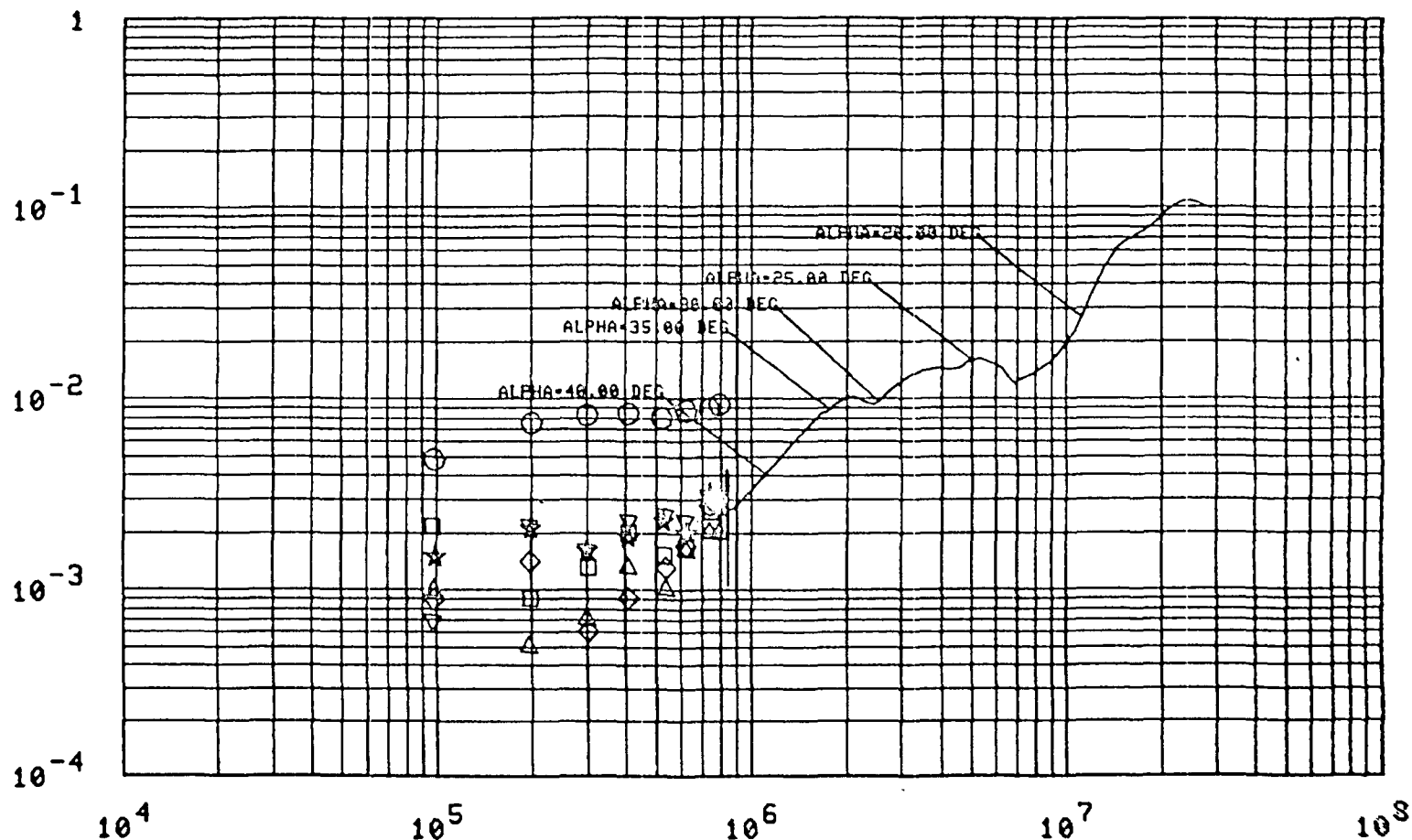
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.80$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9242A/H-REF 965-1360 SEC

FILE COUNT - I/I-REF



REYNOLDS NUMBER (NS)

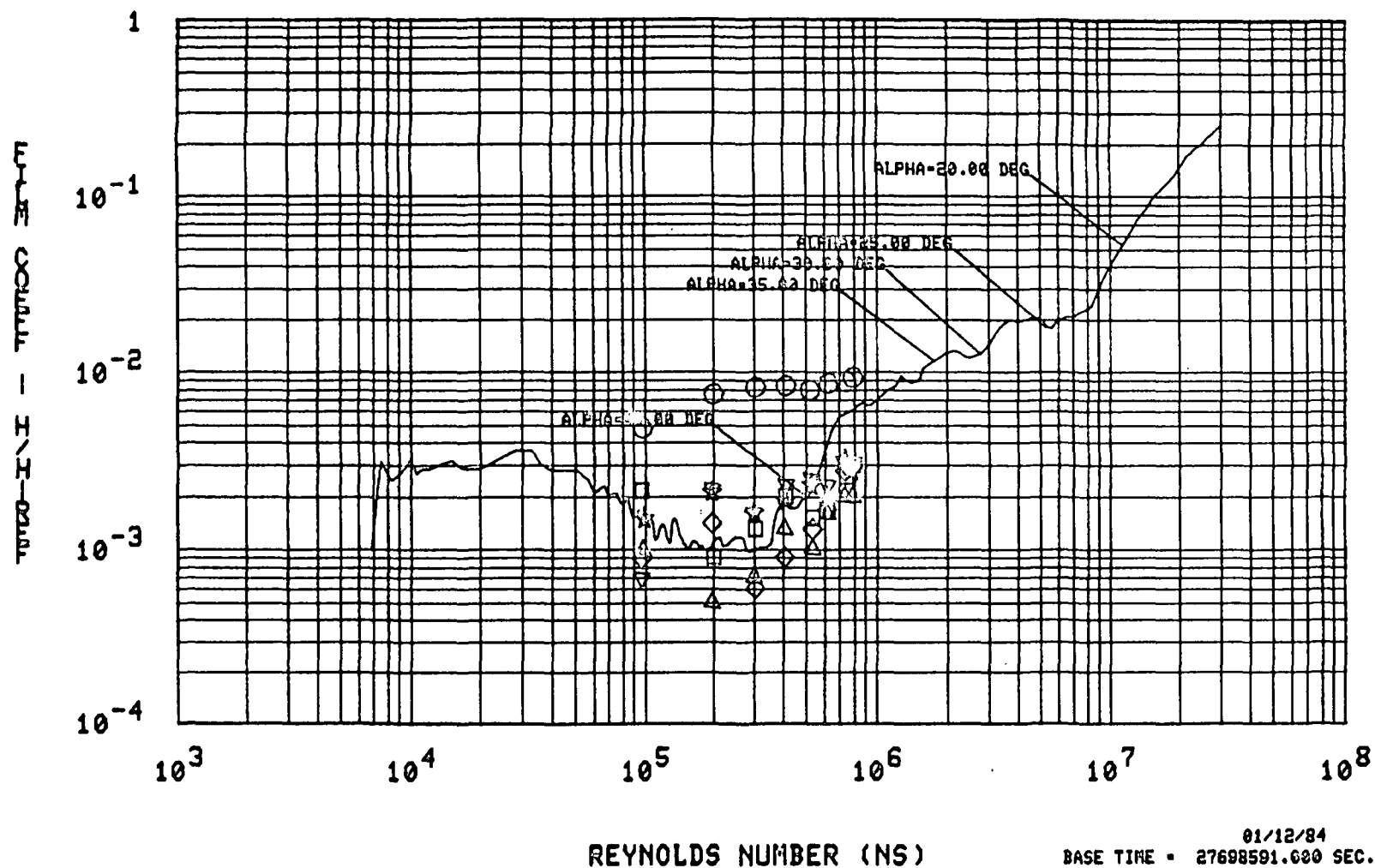
01/12/64  
BASE TIME = 16040433.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.80$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

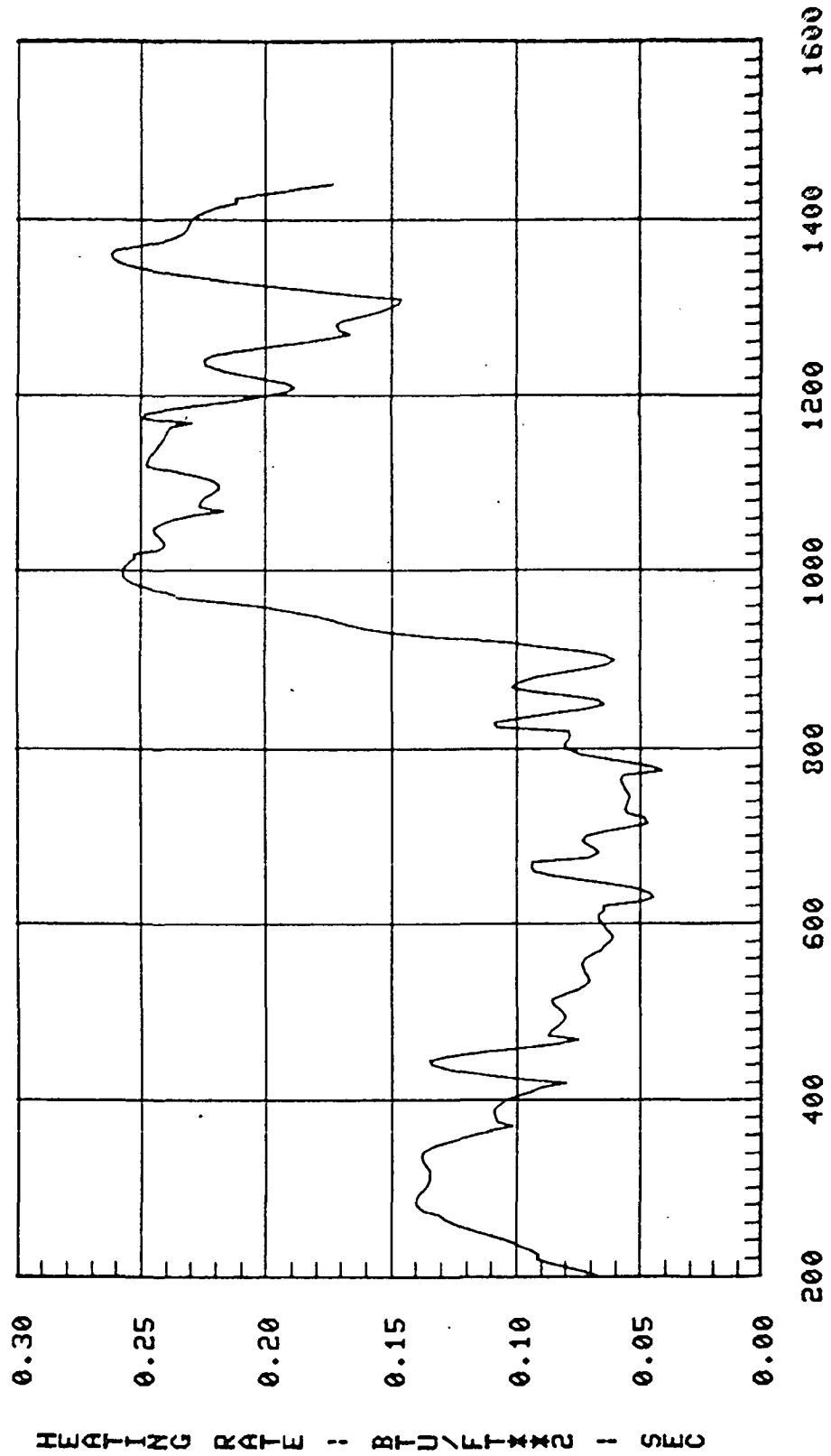
OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9242A/H-REF 150-1430 SEC



STS-3 (107 FT LENGTH SIDE FUS X/L=0.80) Z=400

U07T9242A

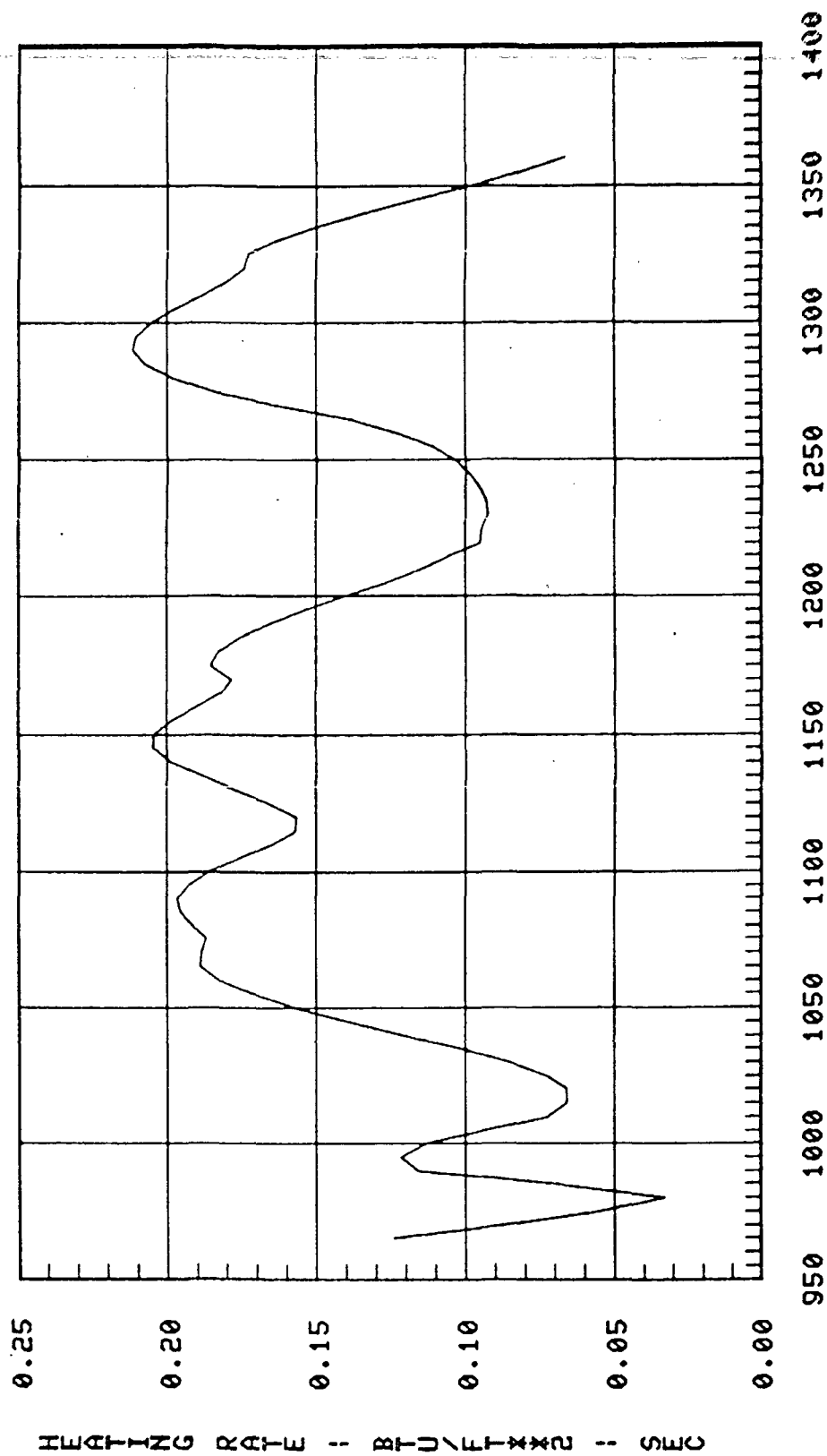


01/11/84

TIME - SECONDS

STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.80$ )  $Z=400$

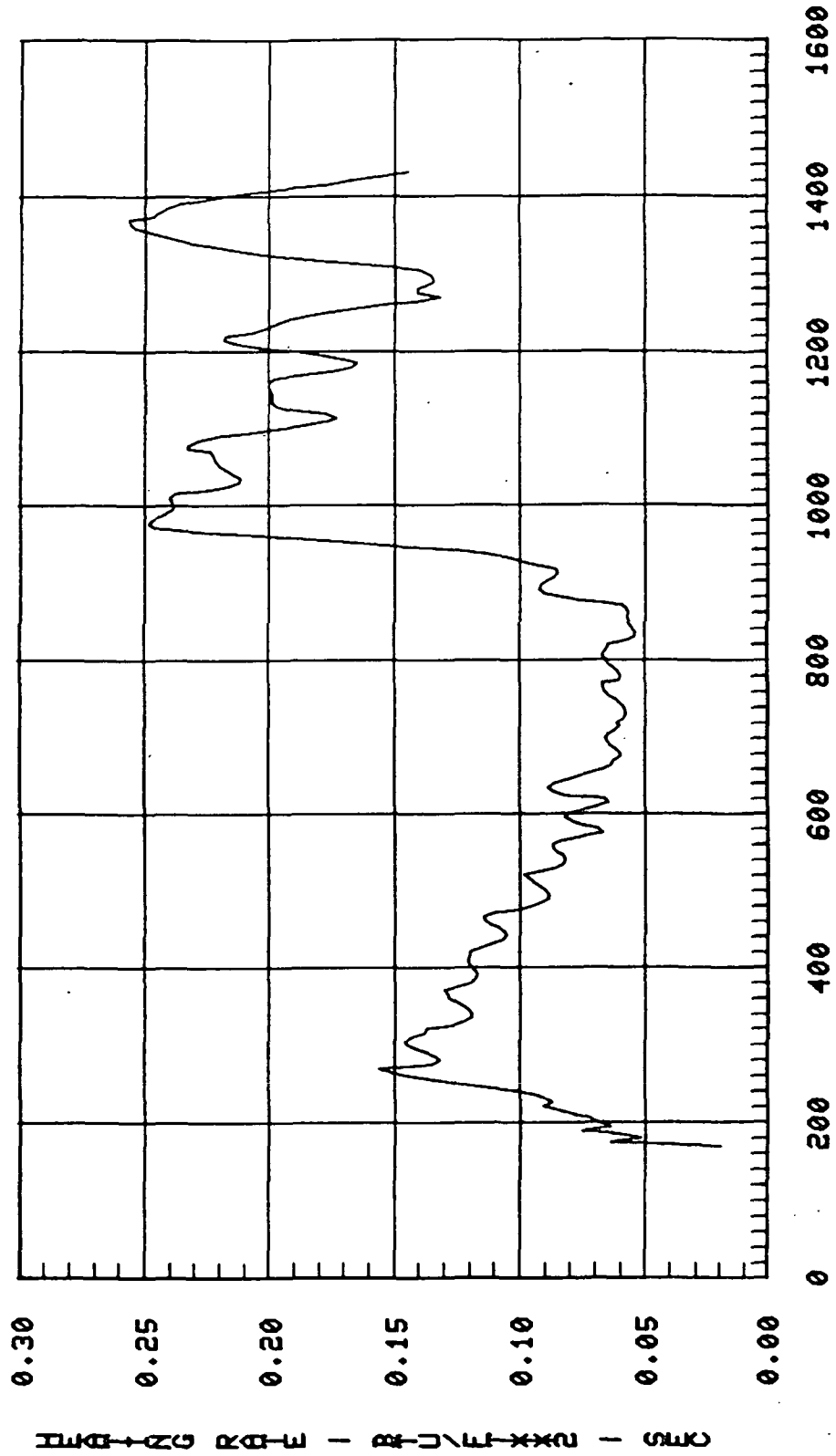
U07T9242A



01/12/84

STS-5 (107 FT LENGTH SIDE FUS  $X/L=0.80$ )  $Z=400$

U87T9242A

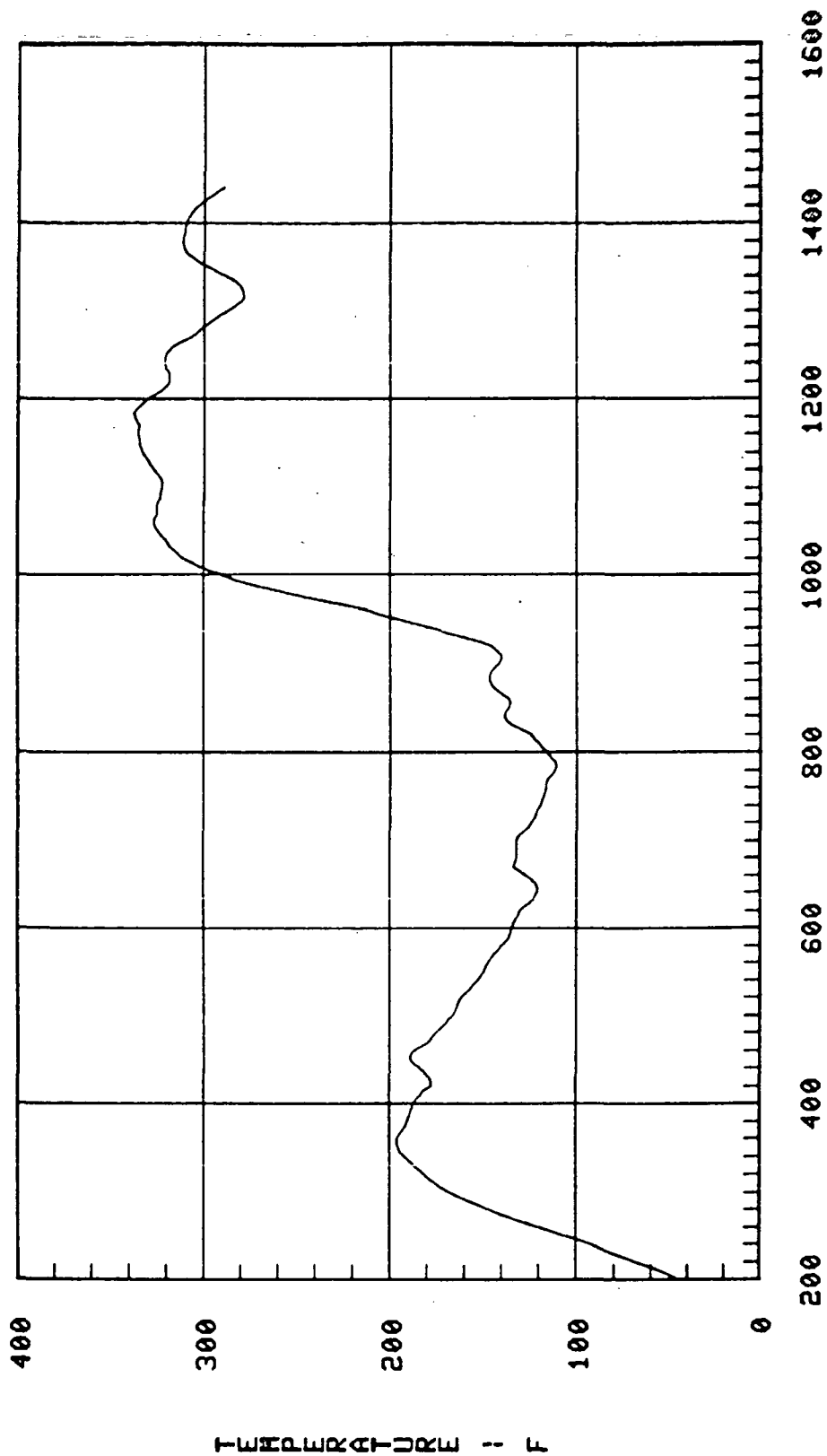


TIME - SECONDS

01/12/84

STS-3 (107 FT LENGTH SIDE FUS X/L=0.80) Z=400

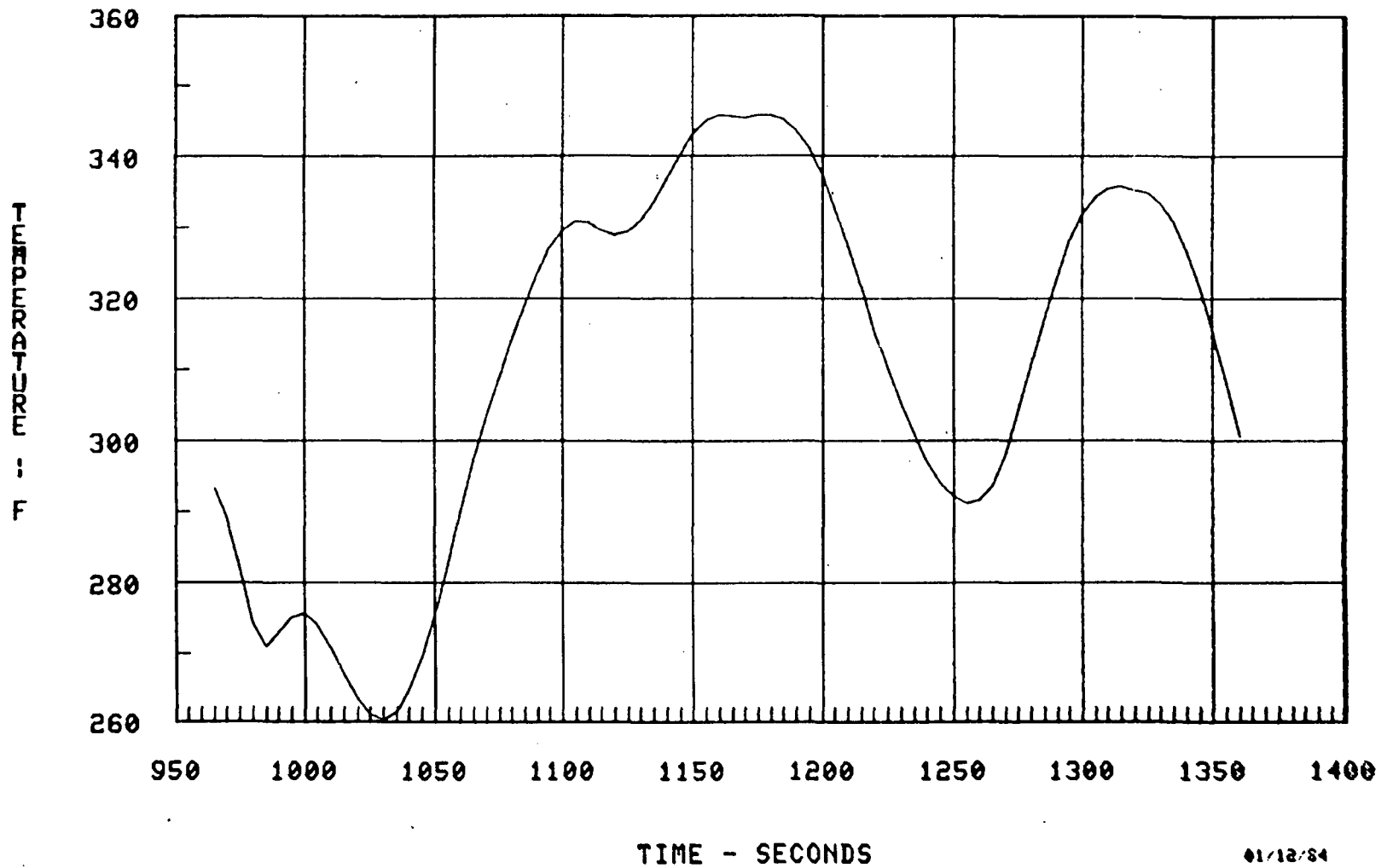
U07T9242A



01/11/84

STS-4 (107 FT LENGTH SIDE FUS X/L=0.80) Z=400

U07T9242A



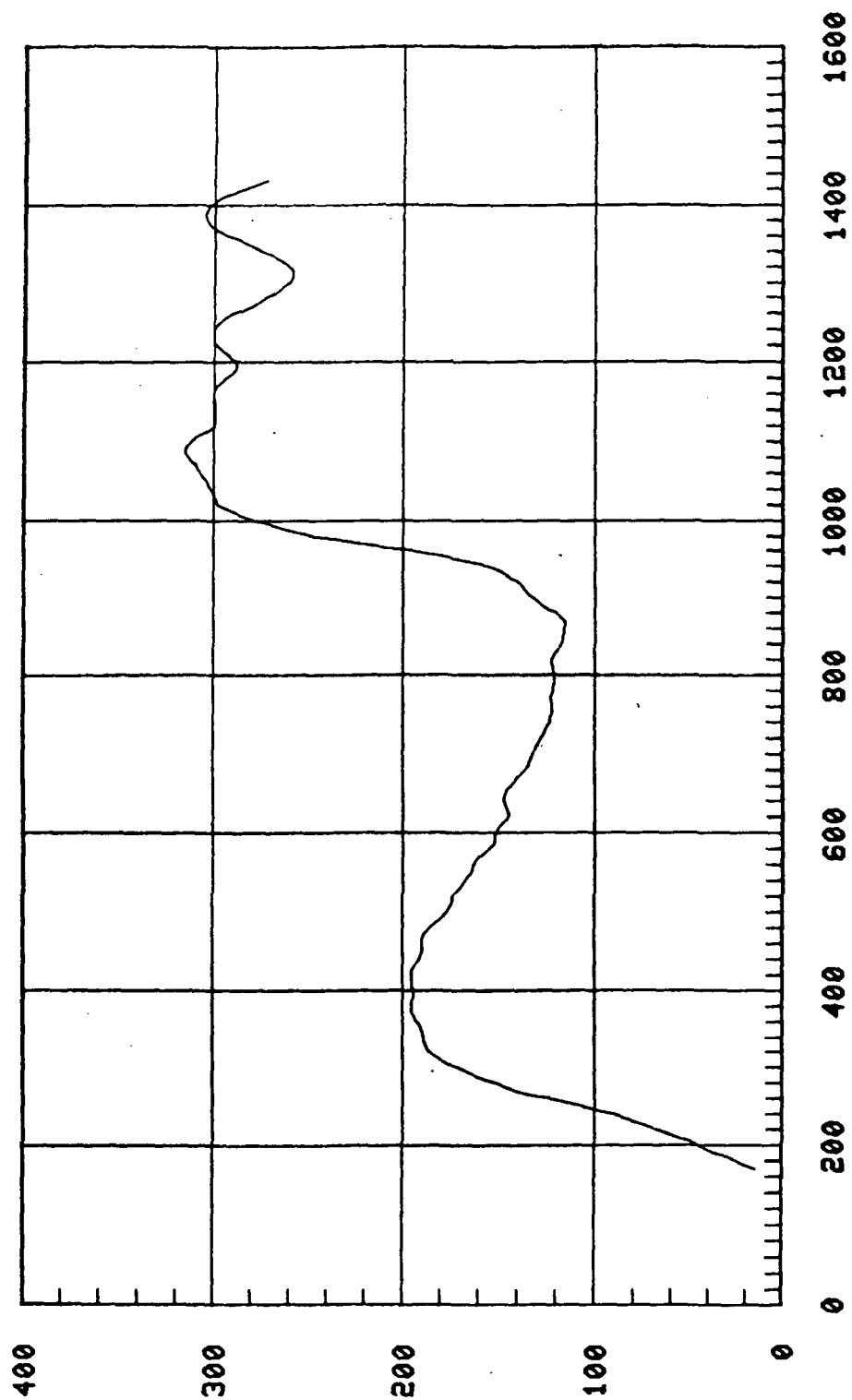
B-319

01/12/84



STS-5 (107 FT LENGTH SIDE FUS X/L=0.80) Z=400

U07T9242A



TIME - SECONDS

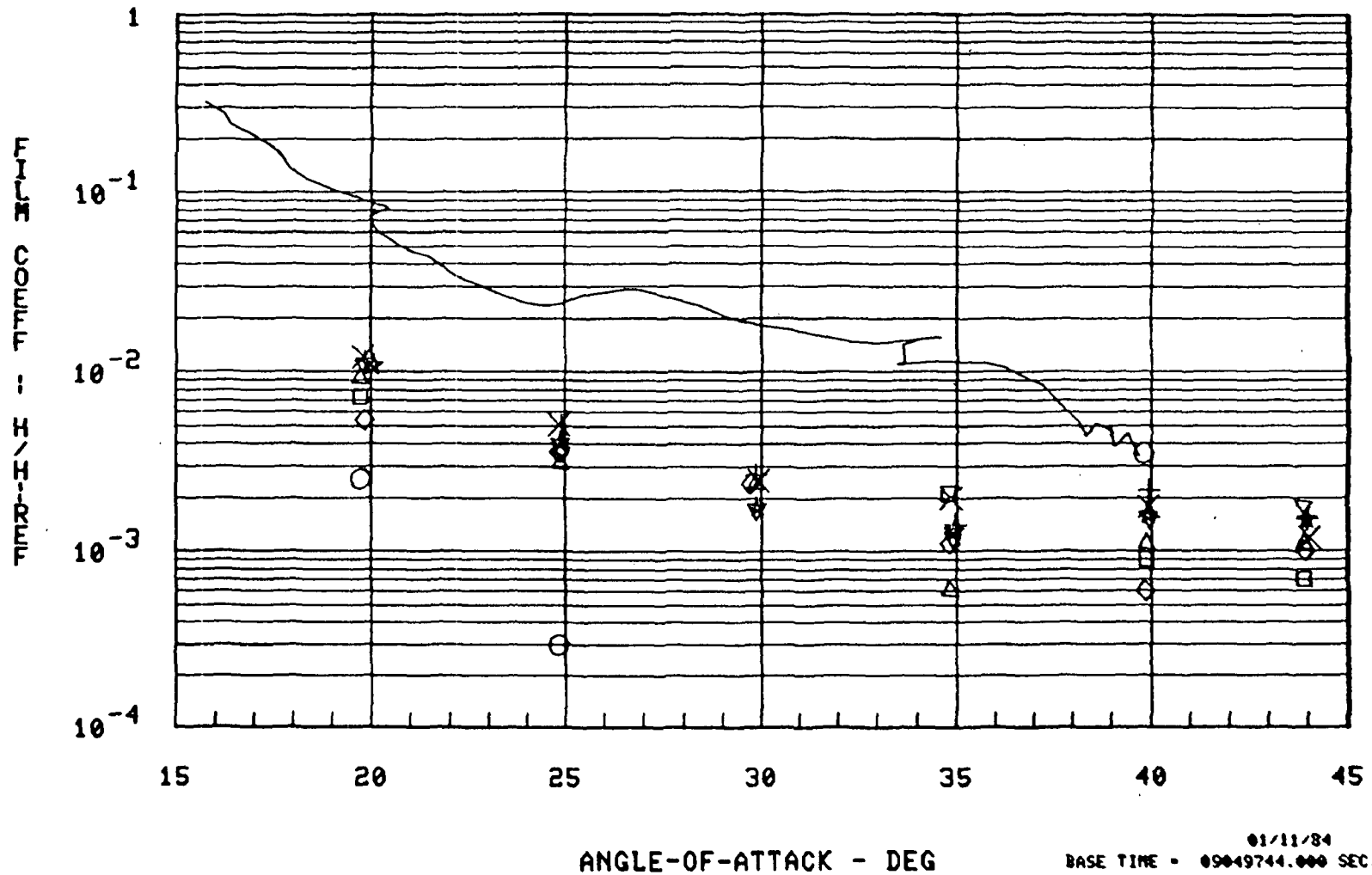
01/12/84

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

○ □ △ ▽ ★ + ×

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U09T9736A/H-REF 1065-1500 SEC

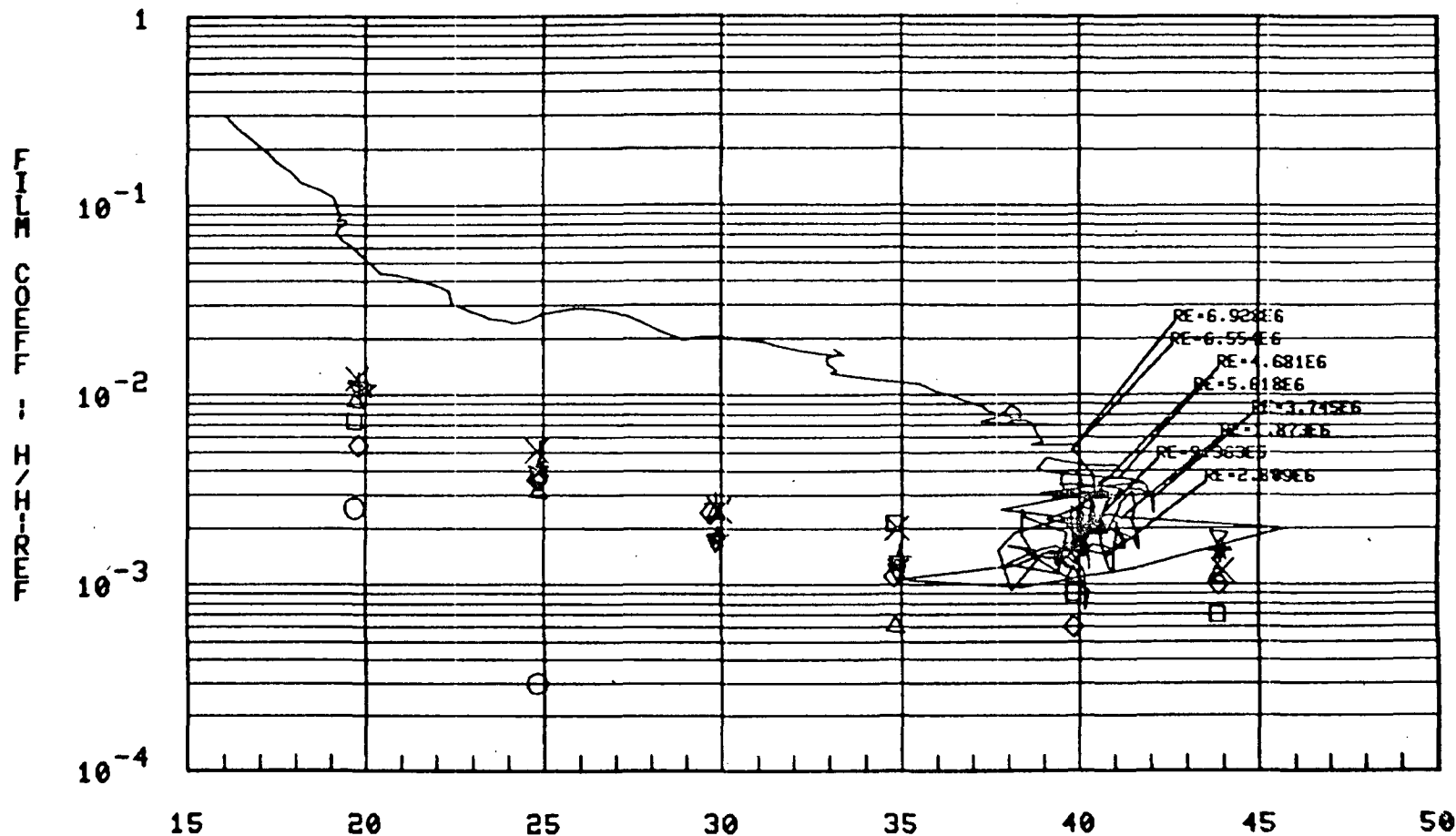


# STS-2 (107 FT LENGTH SIDE FUS X/L=0.85) Z=400

O  
□  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U09T9736A/H-REF 200-1530 SEC



B-322

ANGLE-OF-ATTACK - DEG

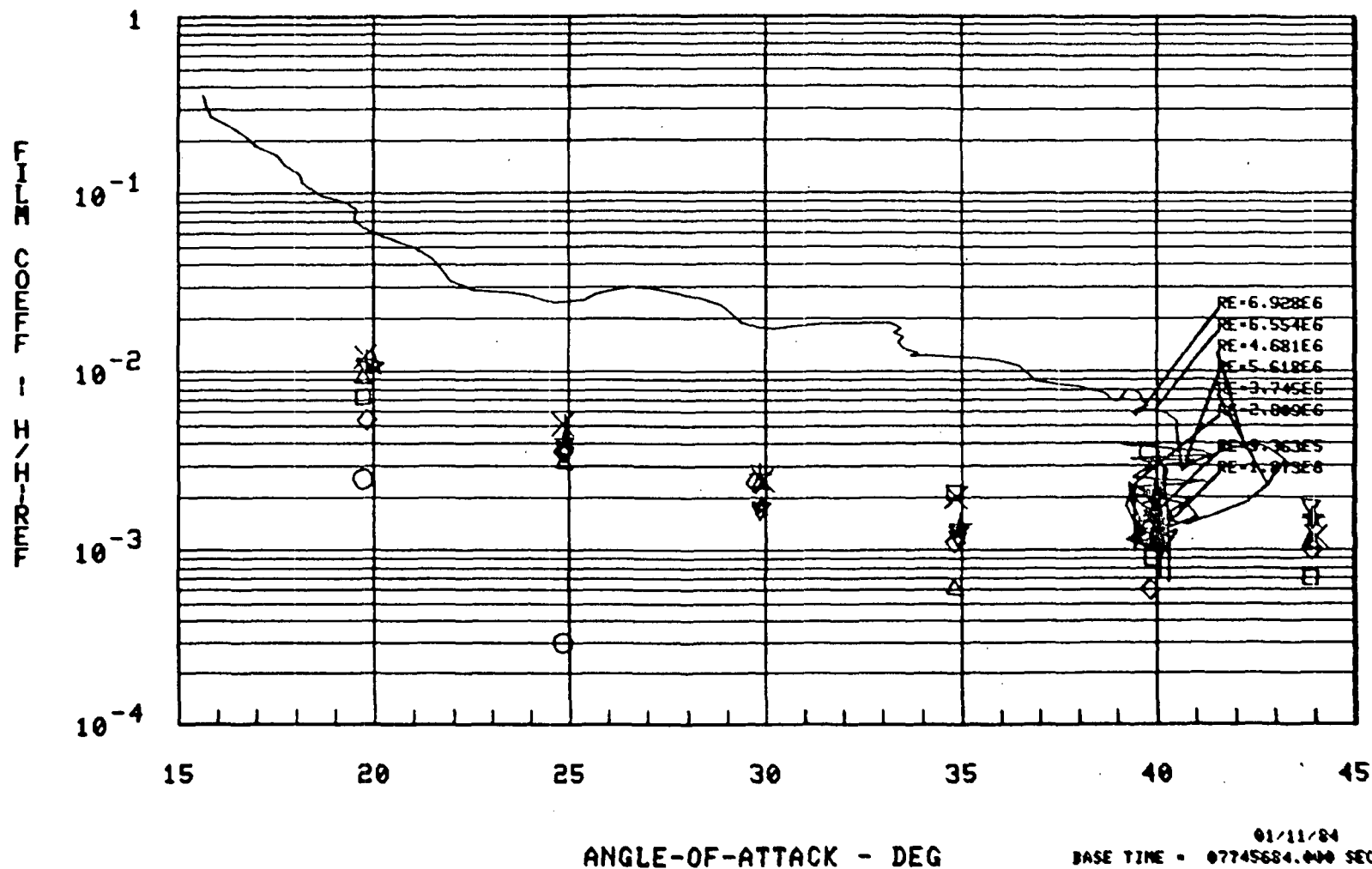
01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS X/L=0.85) Z=400

○  
□  
◇  
△  
▽  
★  
+  
×

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U09T9736A/H-REF 200-1440 SEC

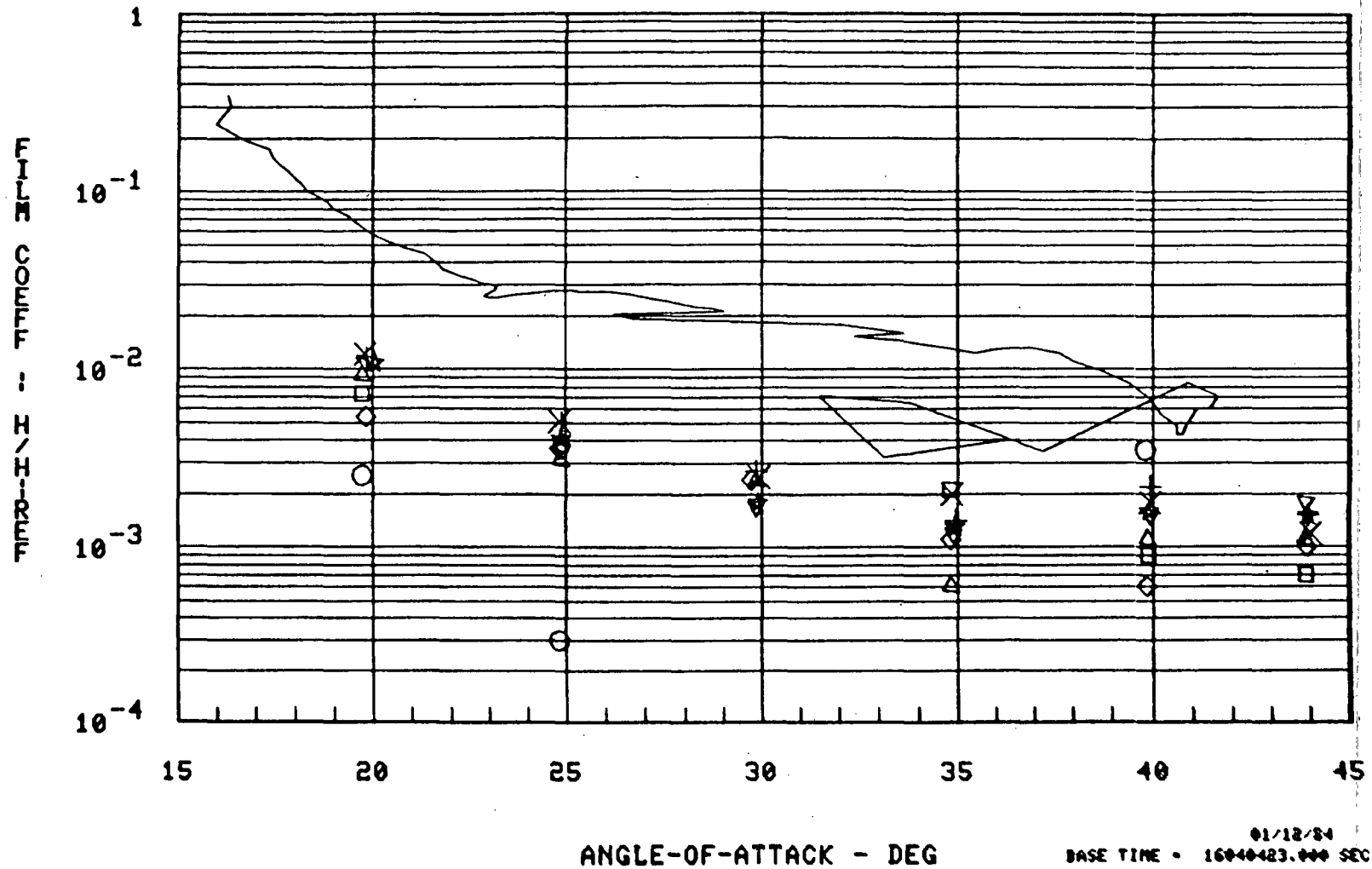


# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

O  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U09T9736A/H-REF 965-1360 SEC

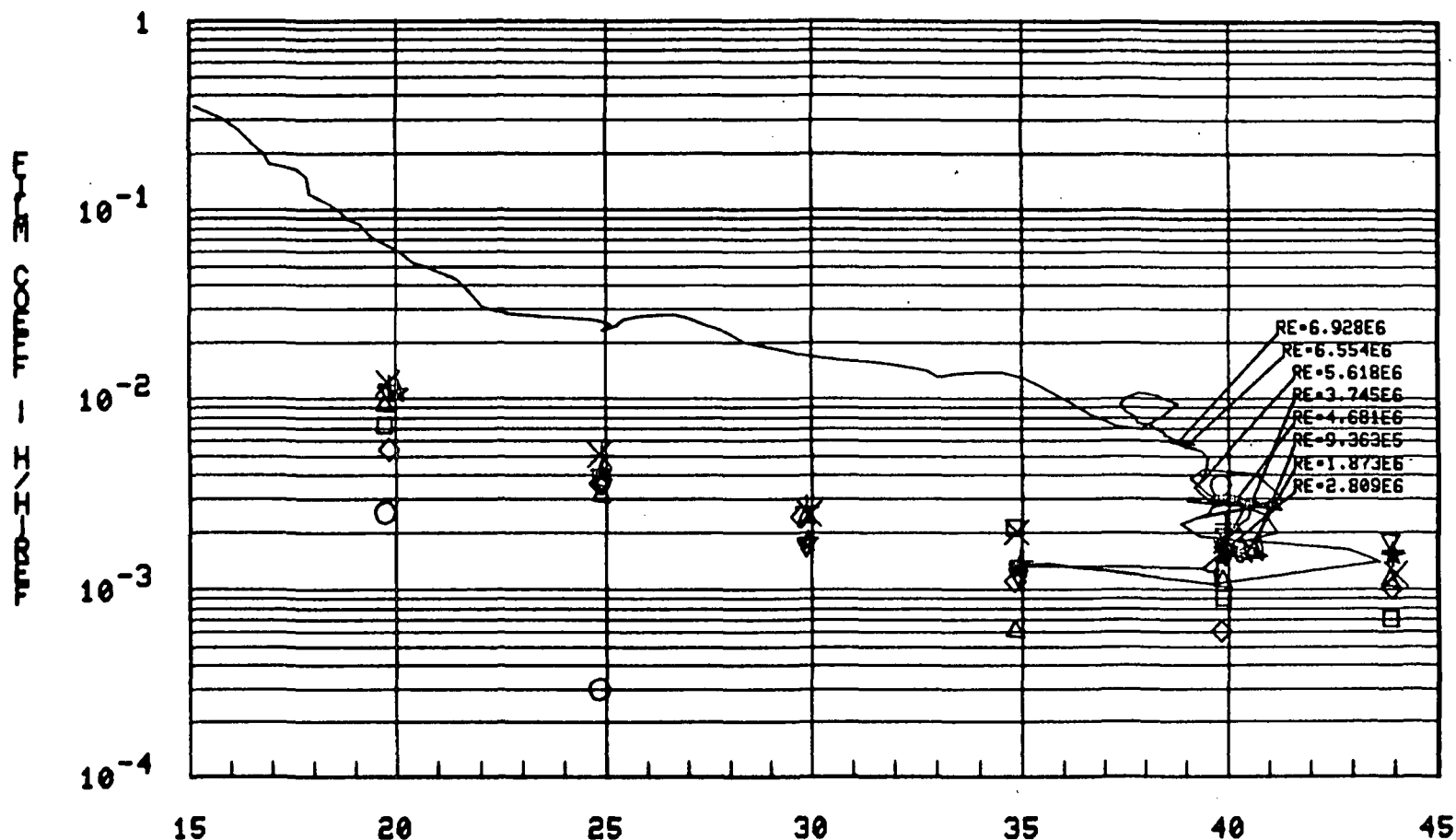


# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

○◇△+×

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U09T9736A/H-REF 150-1430 SEC

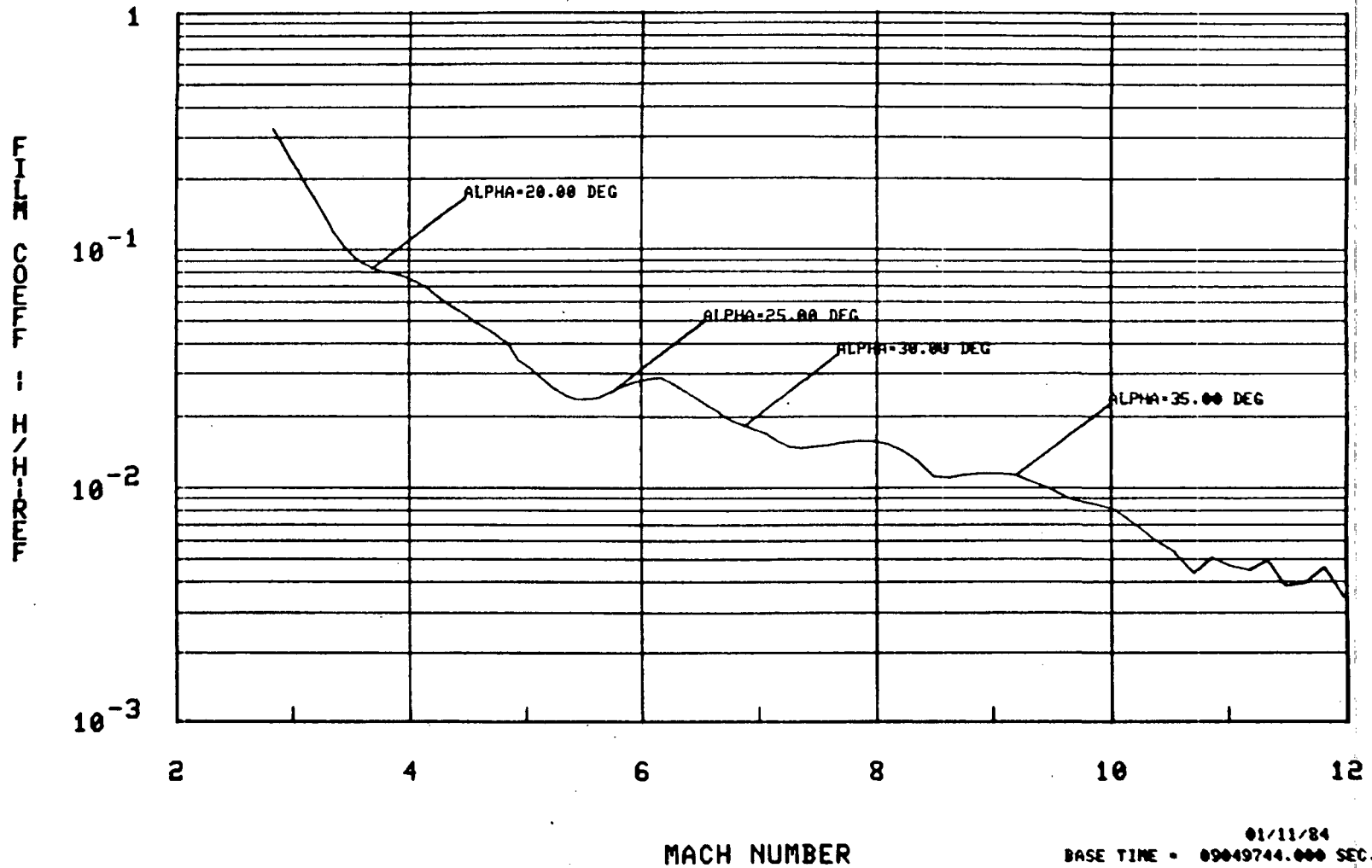


ANGLE-OF-ATTACK - DEG

01/12/84  
 BASE TIME = 27698591.000 SEC.

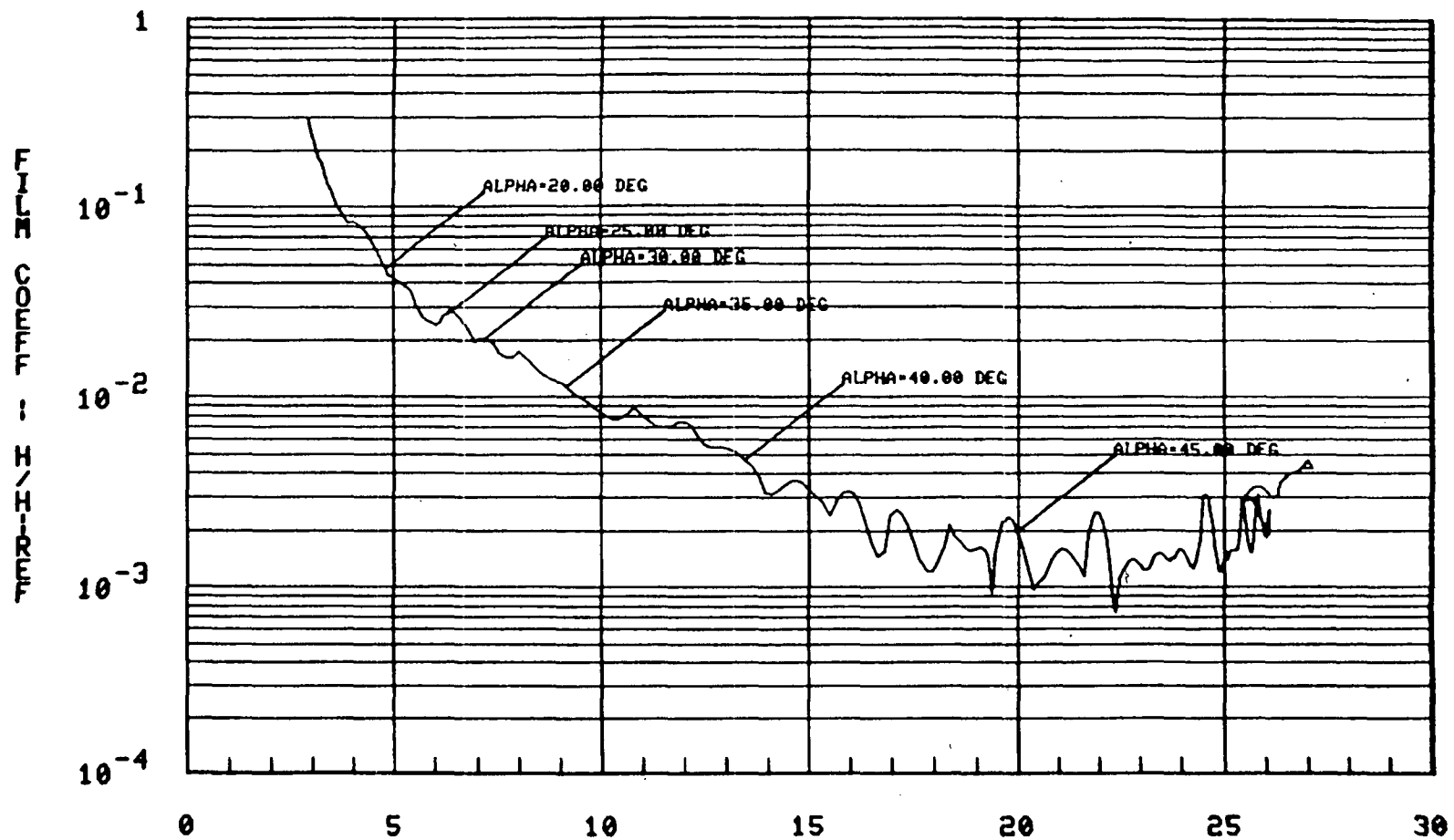
# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

U09T9736A/H-REF 1065-1500 SEC



STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

U09T9736A/H-REF 200-1530 SEC



MACH NUMBER

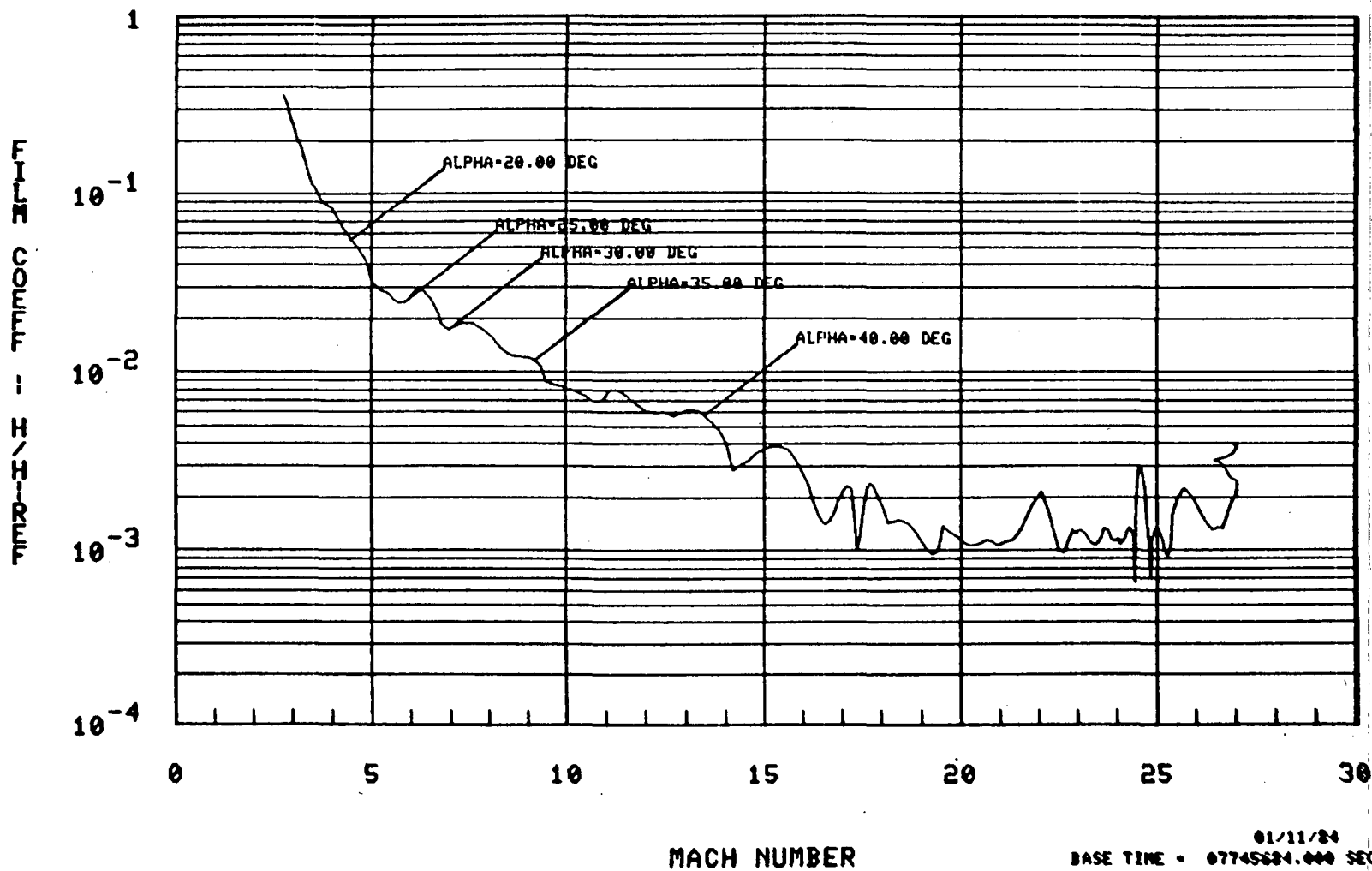
01/11/84  
BASE TIME - 27550236.000 SEC.

B-327



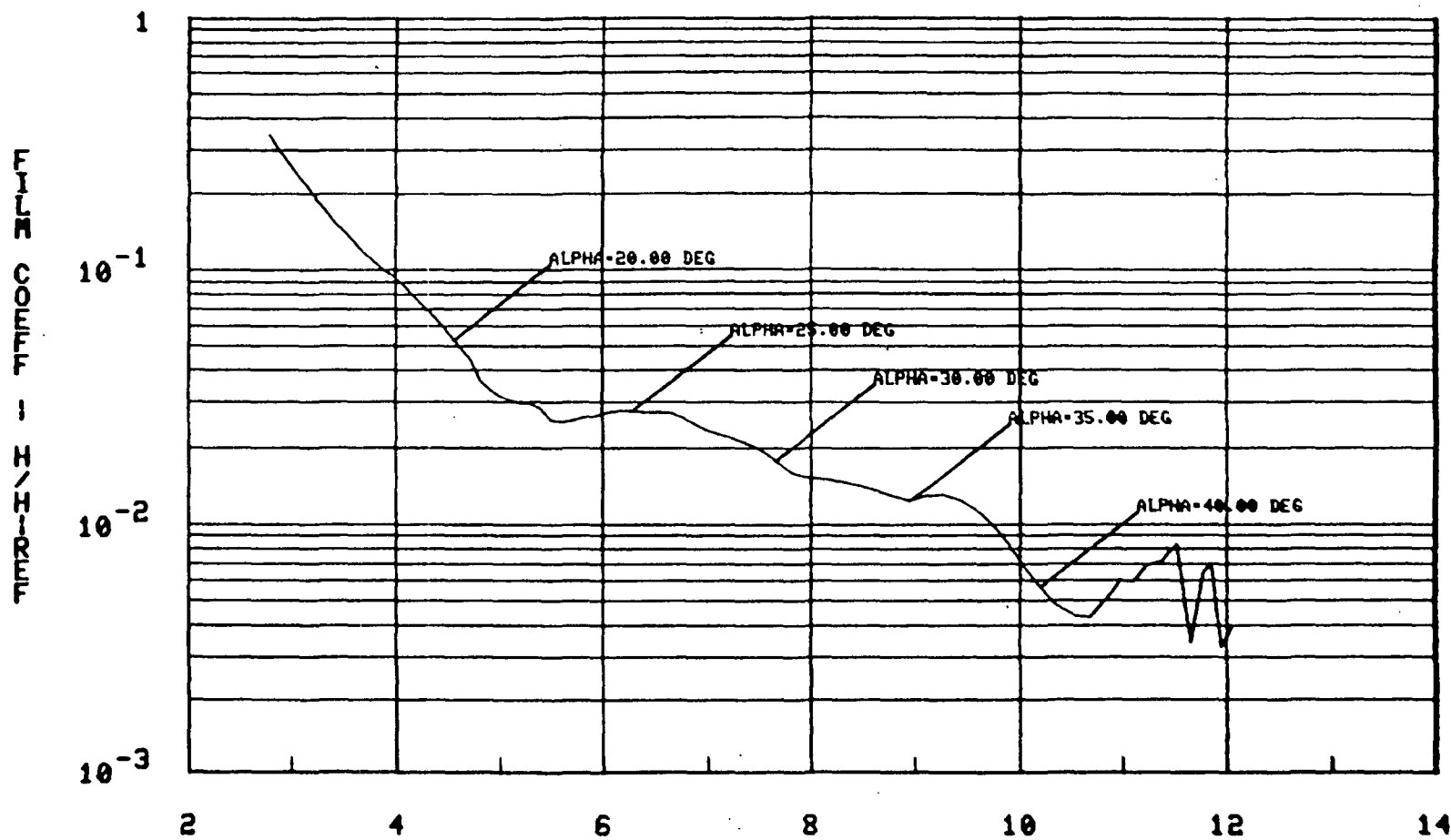
# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

U09T9736A/H-REF 200-1440 SEC



# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

U09T9736A/H-REF 965-1360 SEC



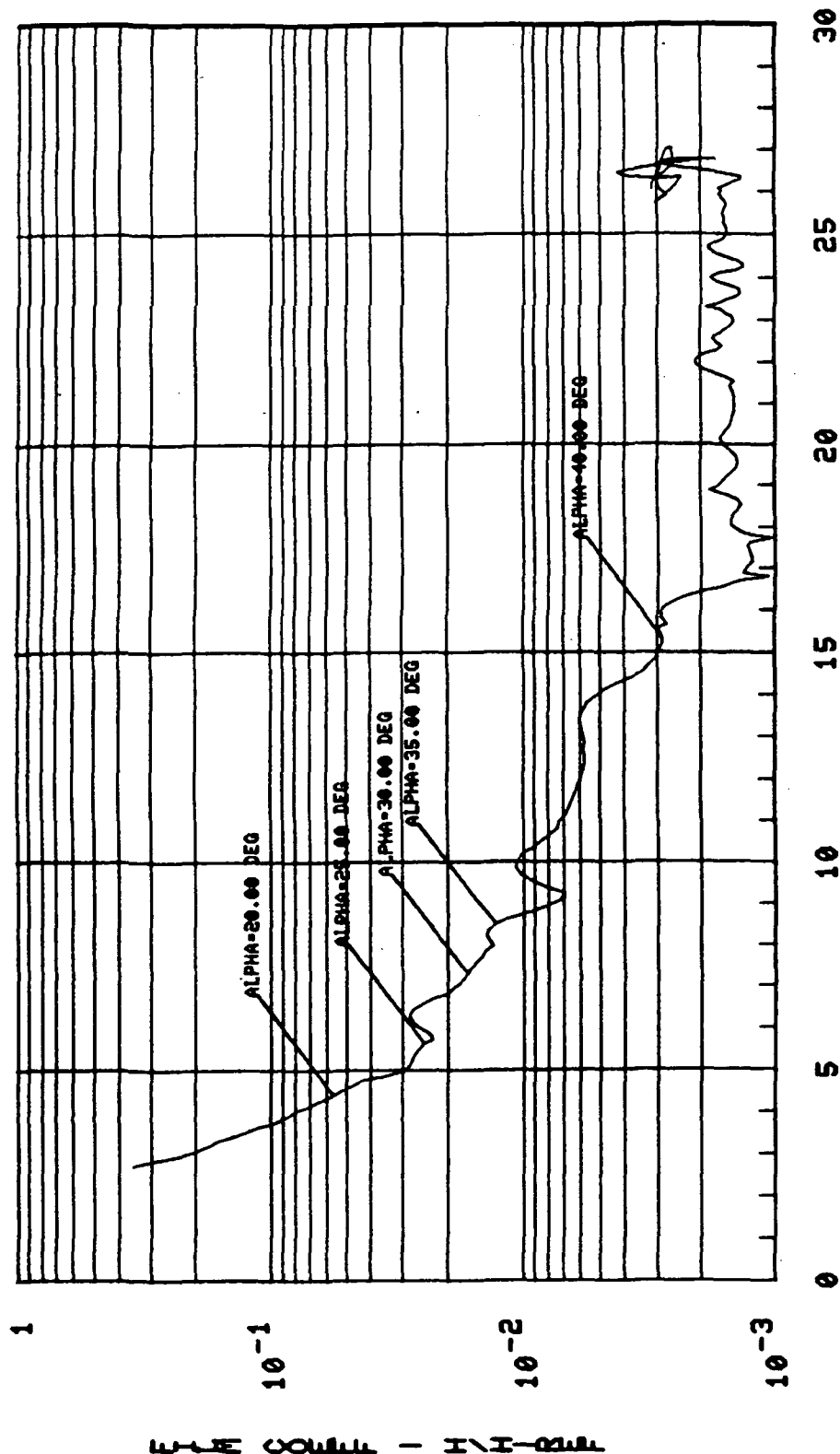
B-329

MACH NUMBER

01/12/84  
BASE TIME = 10040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS X/L=0.85) Z=400

U09T9736A/H-REF 150-1430 SEC



01/12/84  
BASE TIME - 27698591.000 SEC.

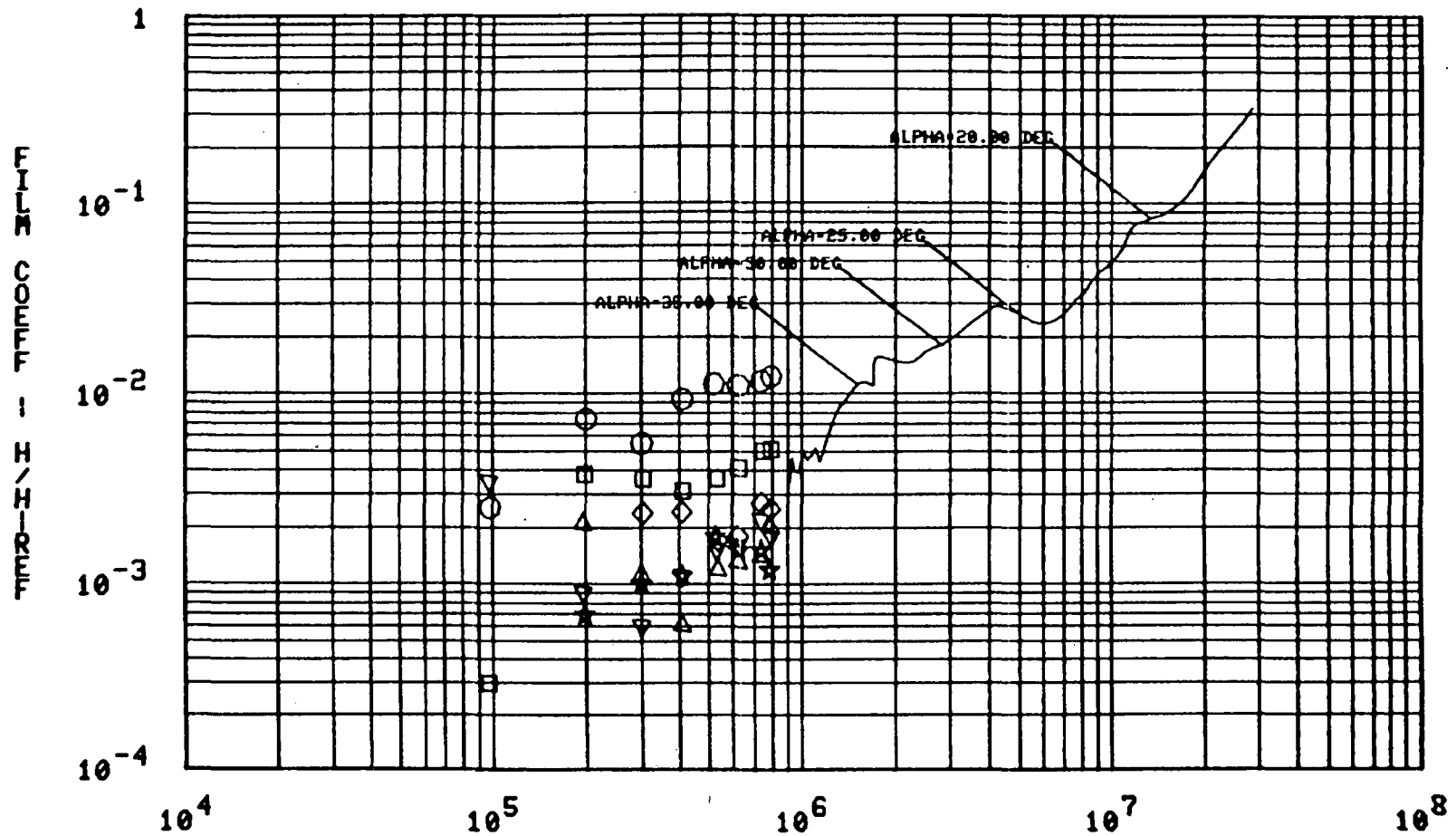
MACH NUMBER

# STS-1 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U09T9736A/H-REF 1065-1500 SEC



B-331

REYNOLDS NUMBER (NS)

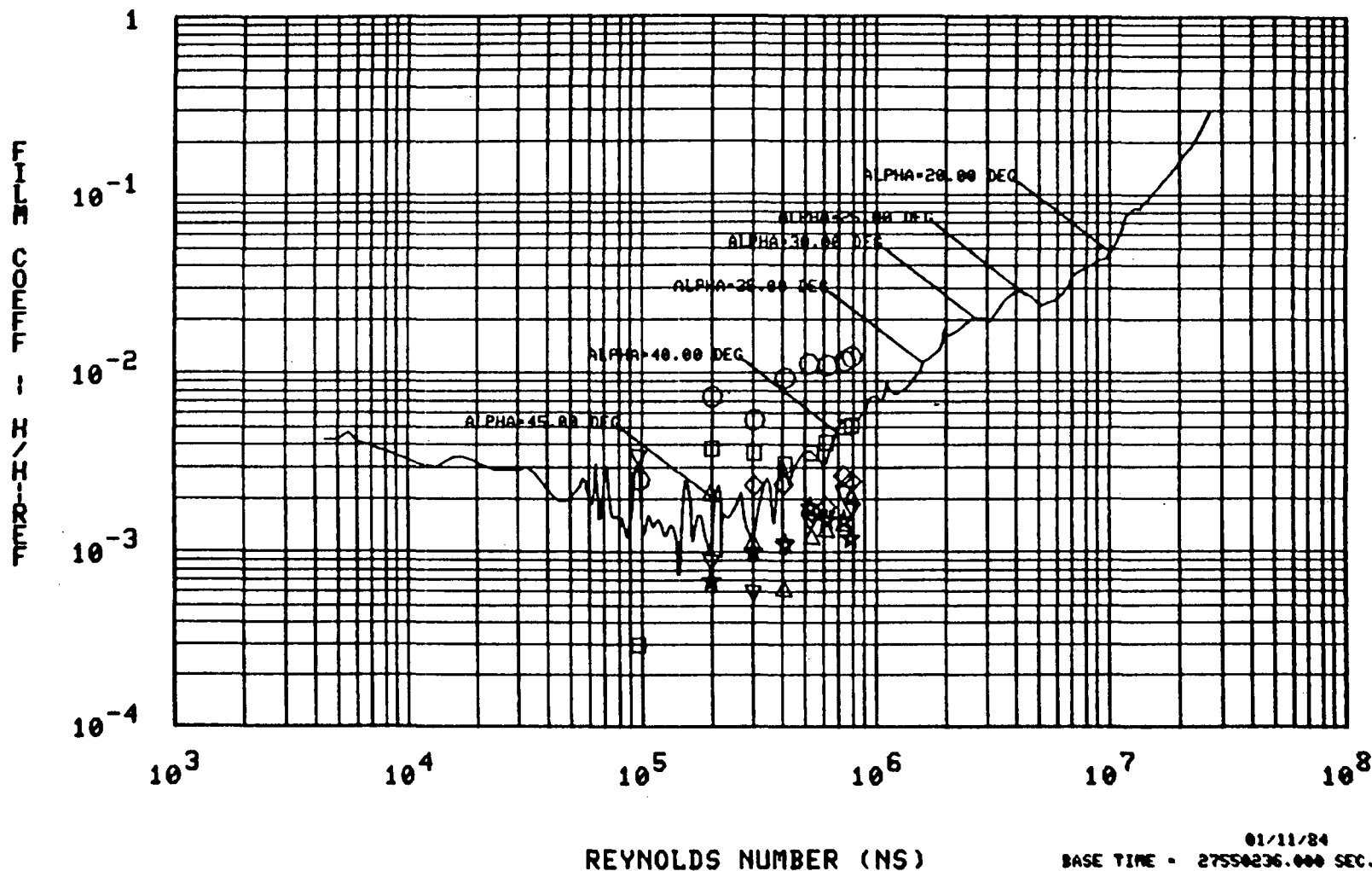
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U09T9736A/H-REF 200-1530 SEC

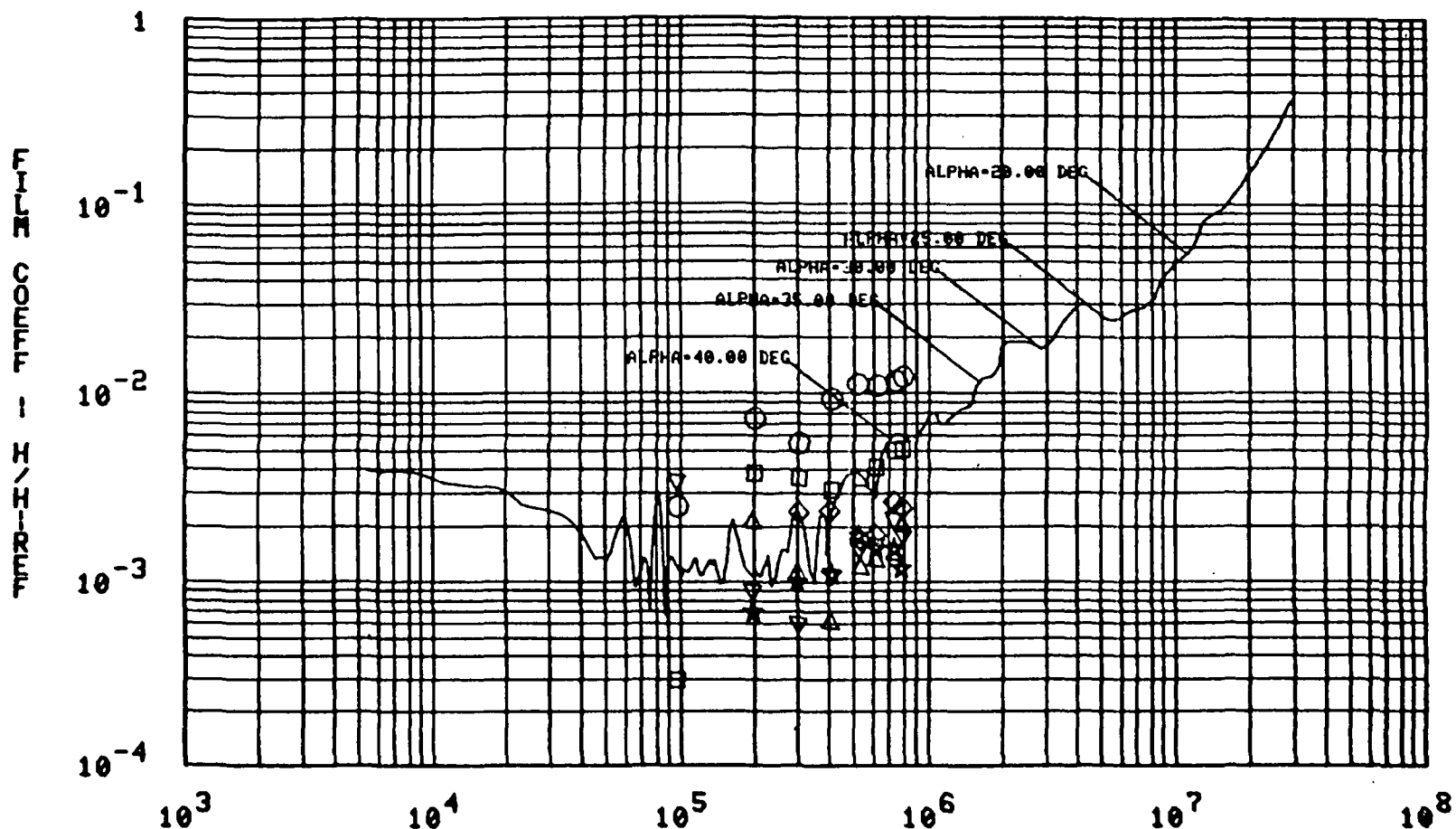


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

○  
◇  
△  
▽  
★

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U09T9736A/H-REF 200-1440 SEC



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME • 07745684.000 SEC.

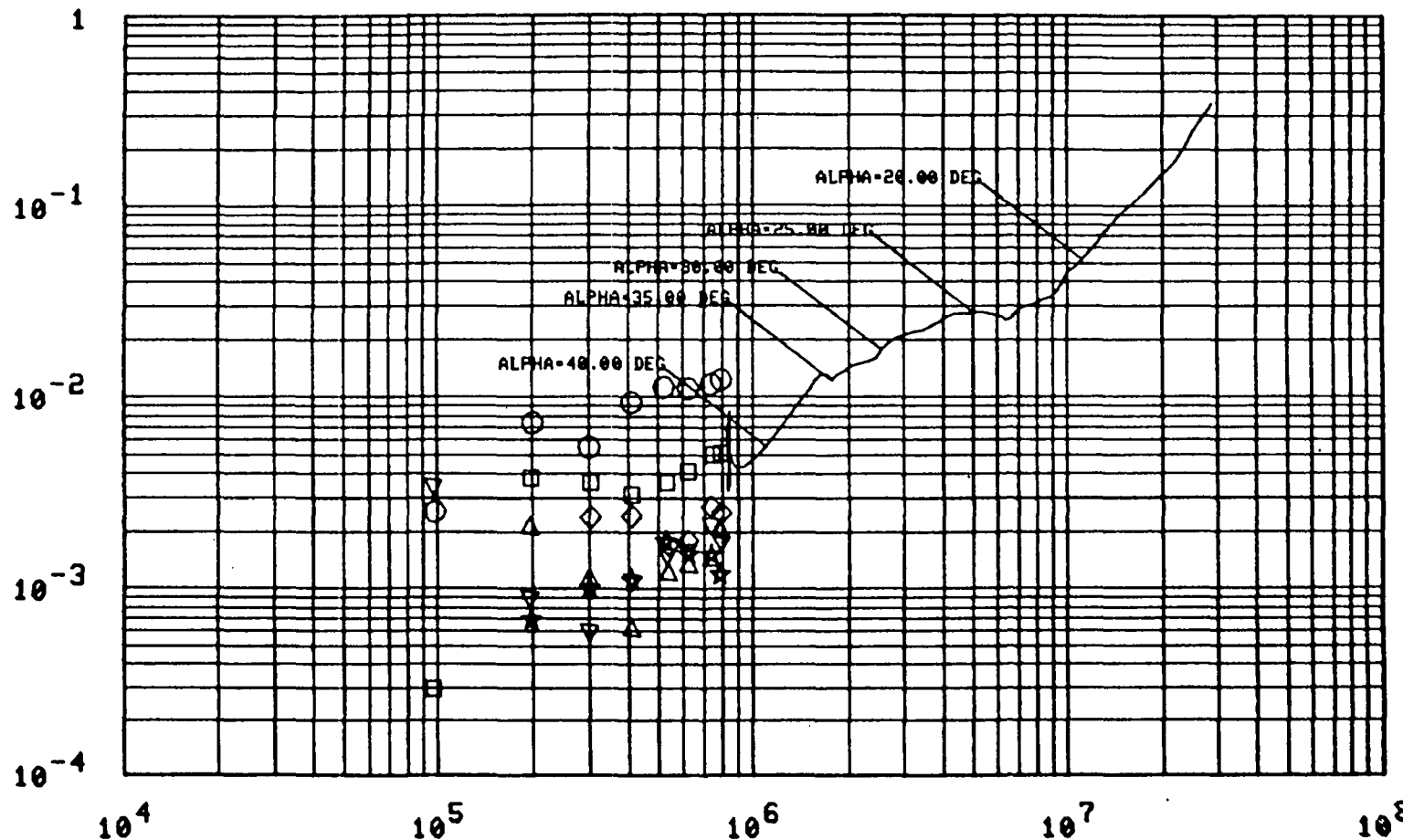
# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

U09T9736A/H-REF 965-1360 SEC

○  
◇  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

LINE COUNT - H/H-COUNT



B-334

REYNOLDS NUMBER (NS)

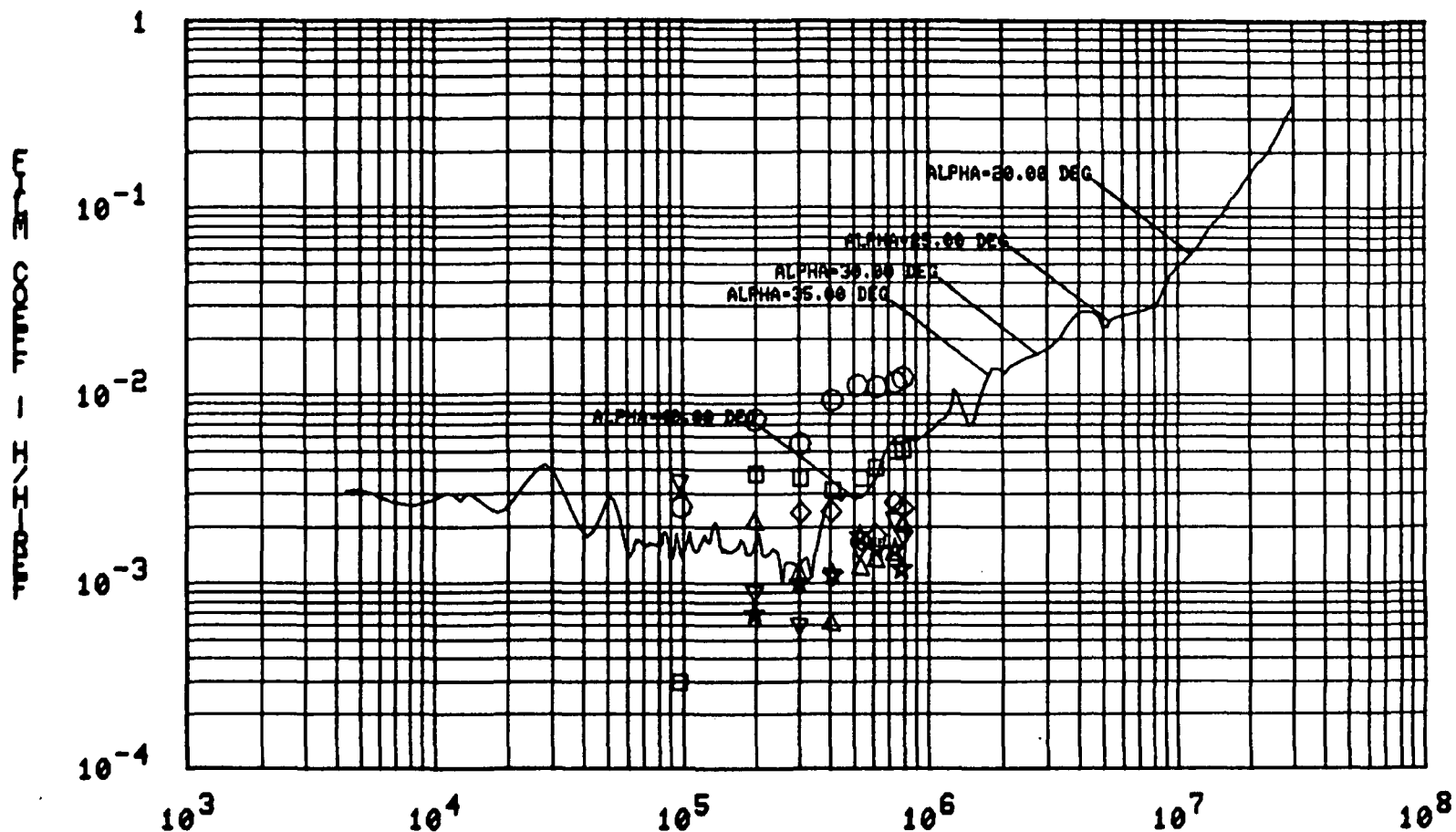
01/12/84  
BASE TIME = 16040483.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS X/L=0.85) Z=400

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U09T9736A/H-REF 150-1430 SEC



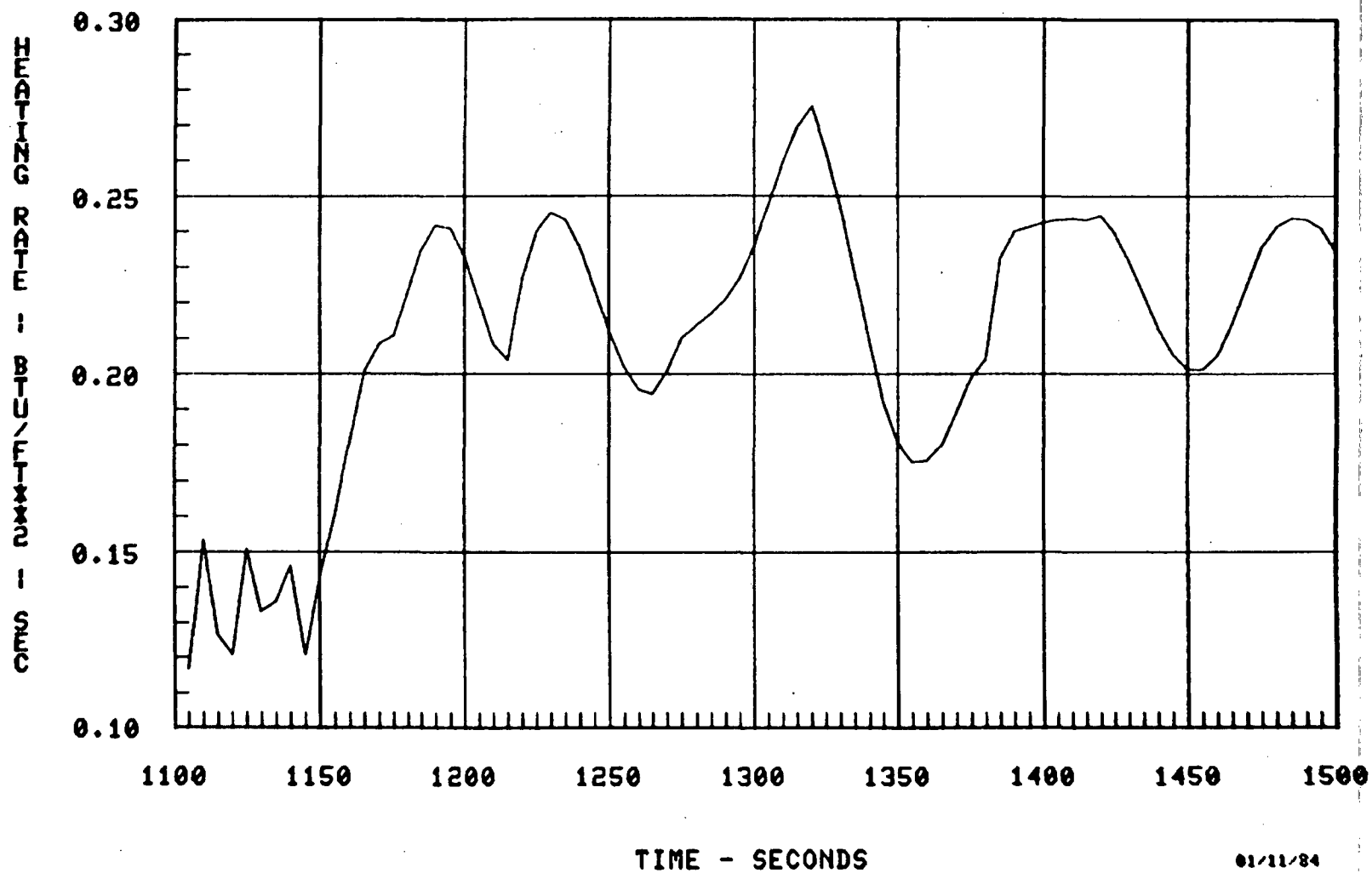
REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 87698591.000 SEC.



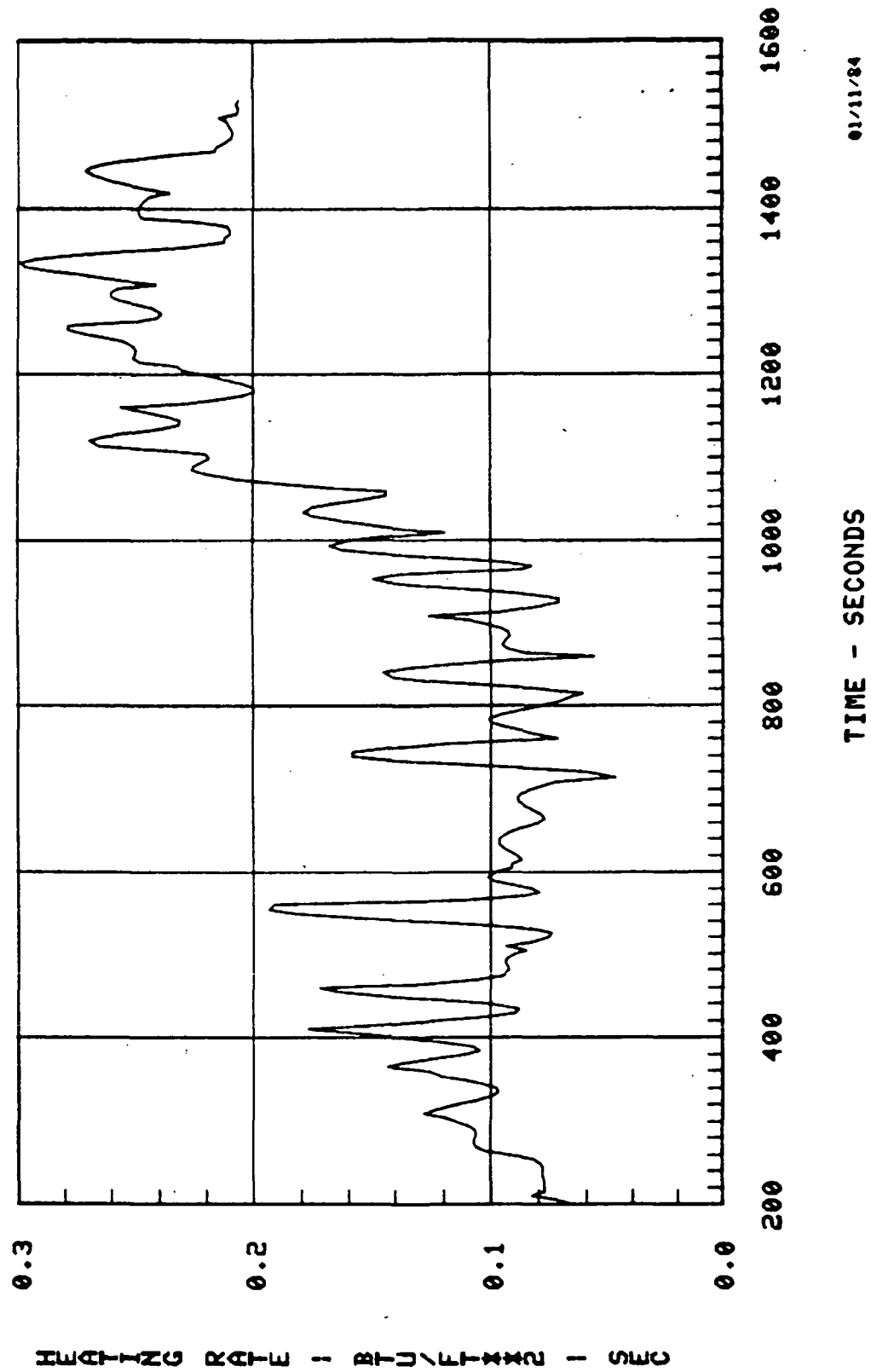
STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

U09T9736A



STS-2 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

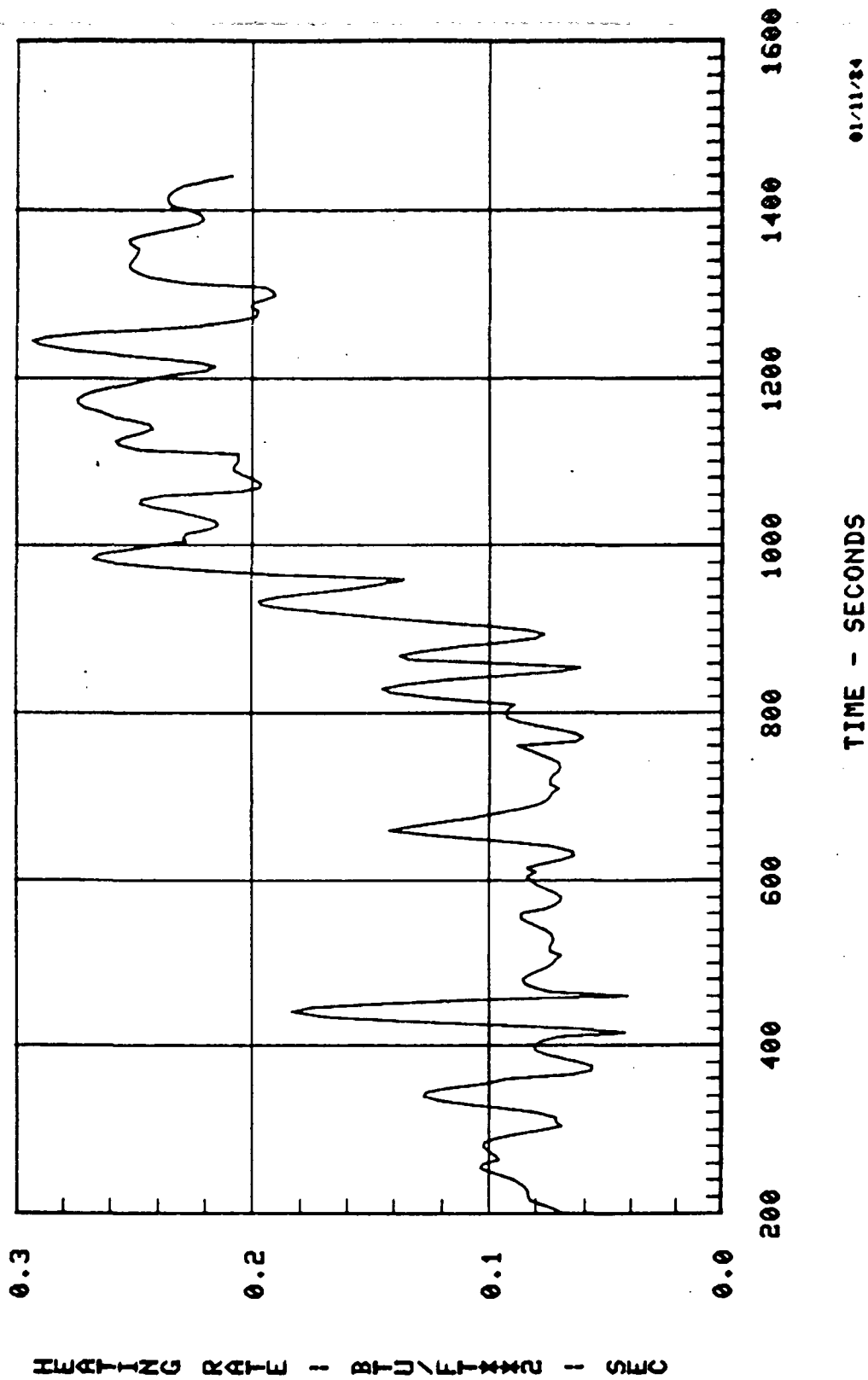
U09T9736A



01/11/84

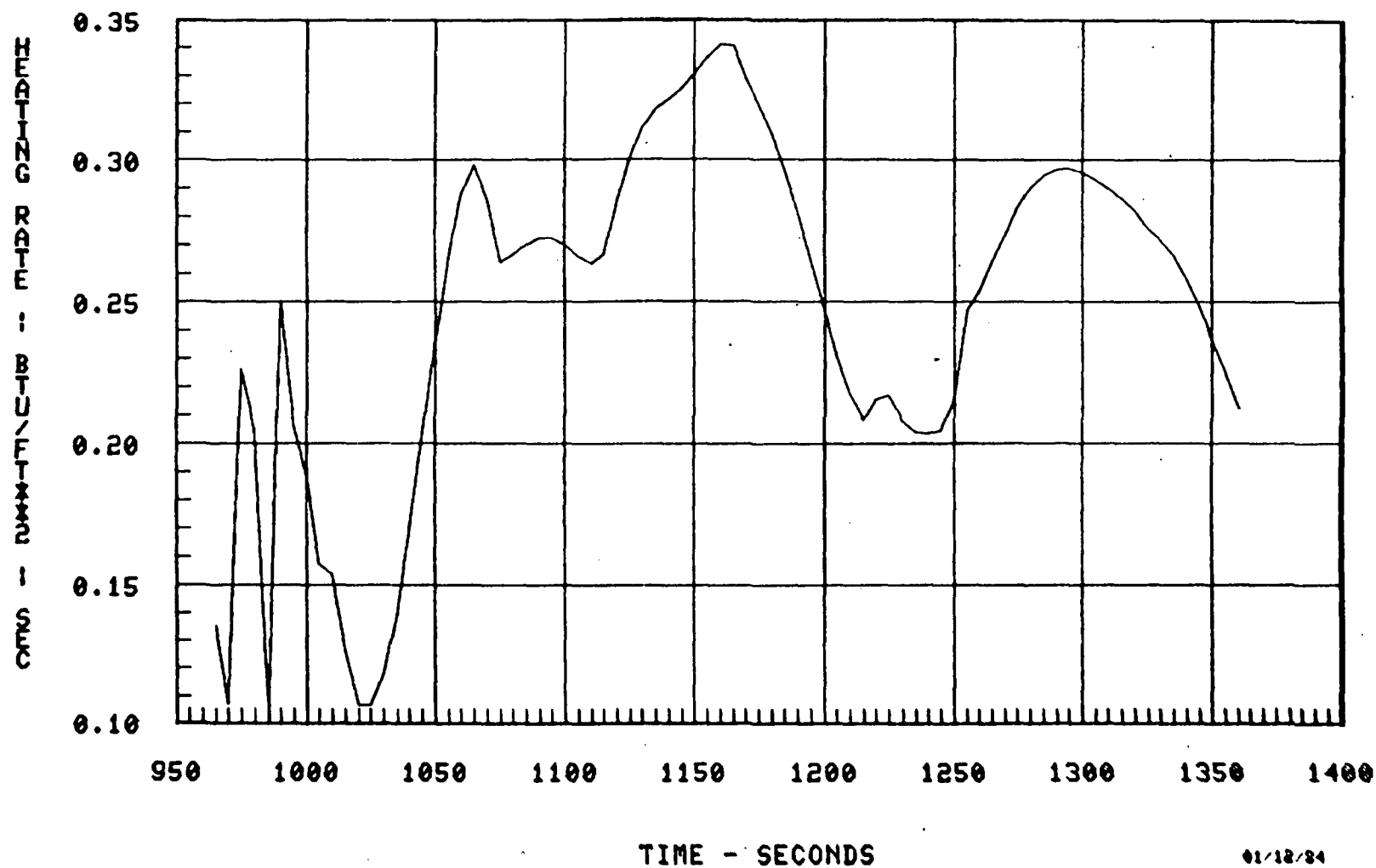
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

U09T9736A



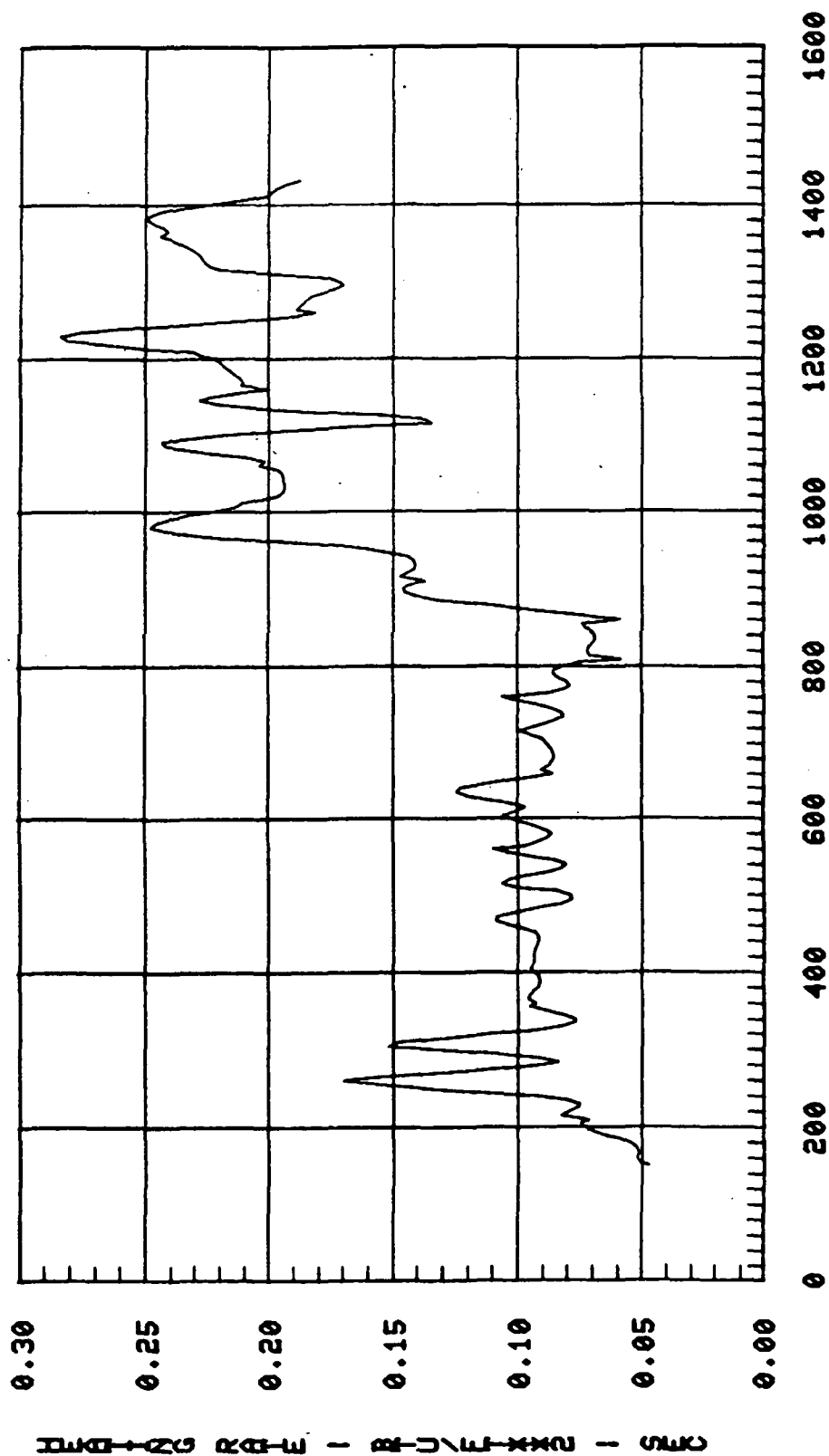
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

U09T9736A



STS-5 (107 FT LENGTH SIDE FUS X/L=0.85) Z=400

U09T9736A

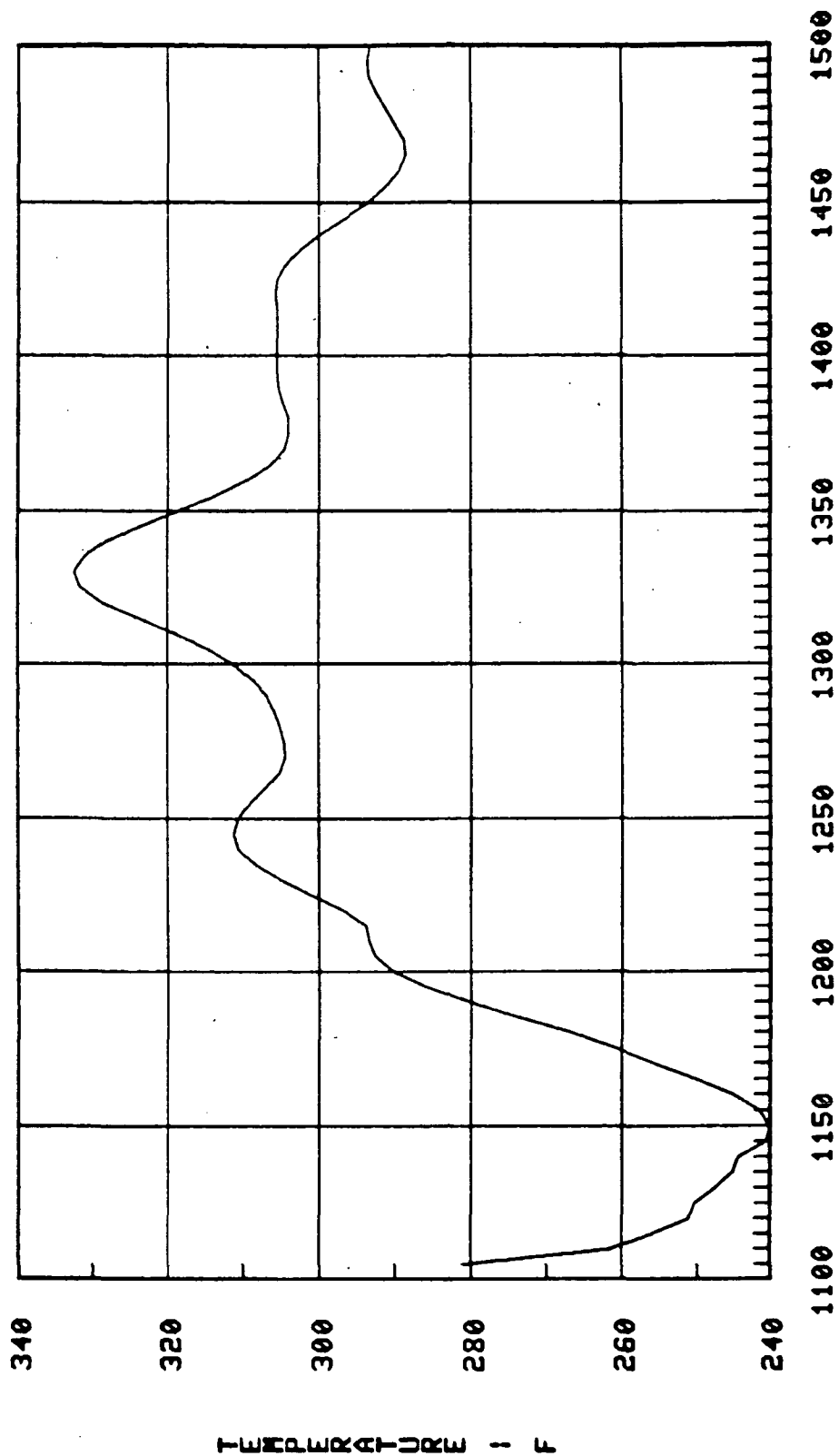


01/12/84

TIME - SECONDS

STS-1 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

U09T9736A

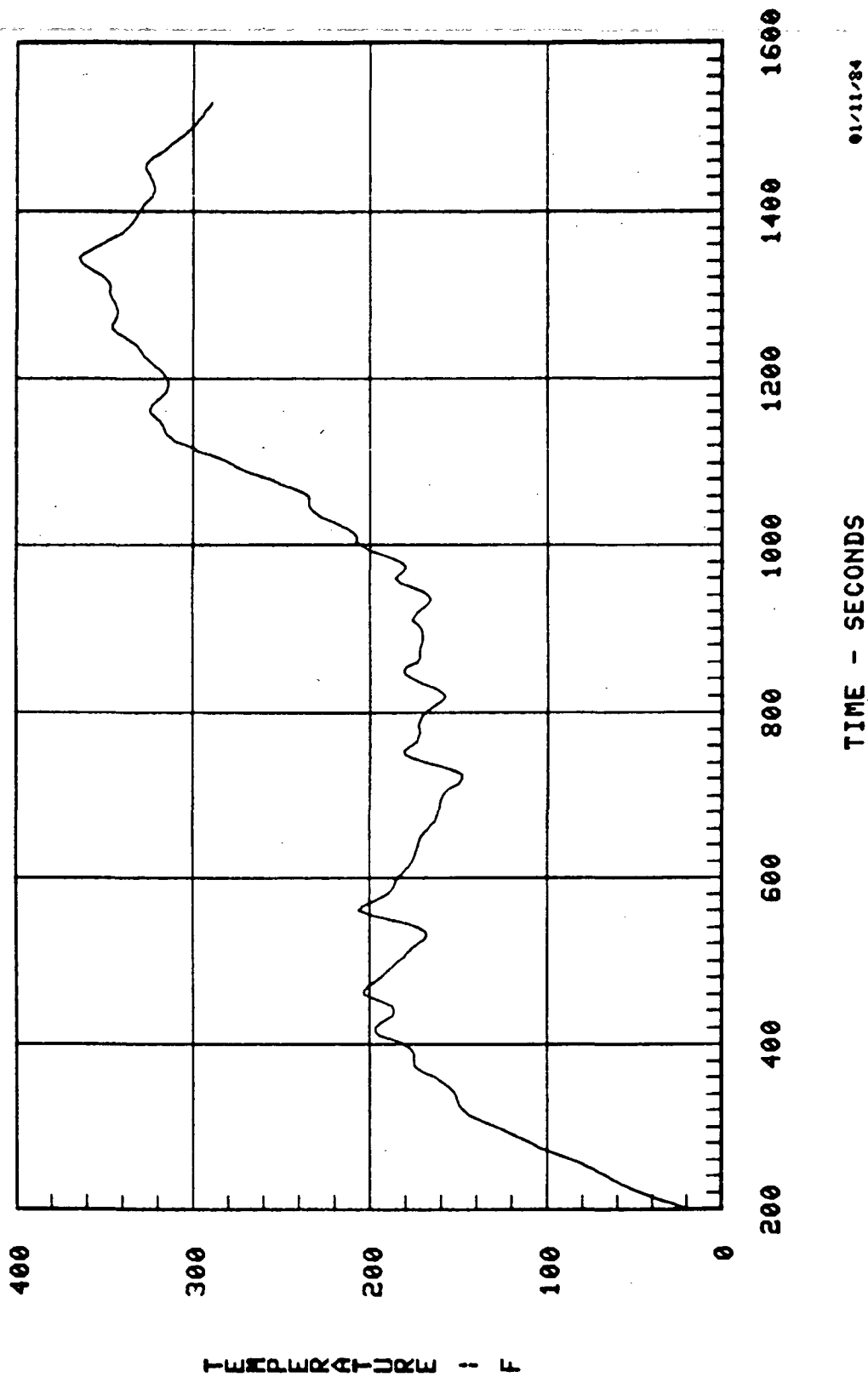


TIME - SECONDS

01/11/84

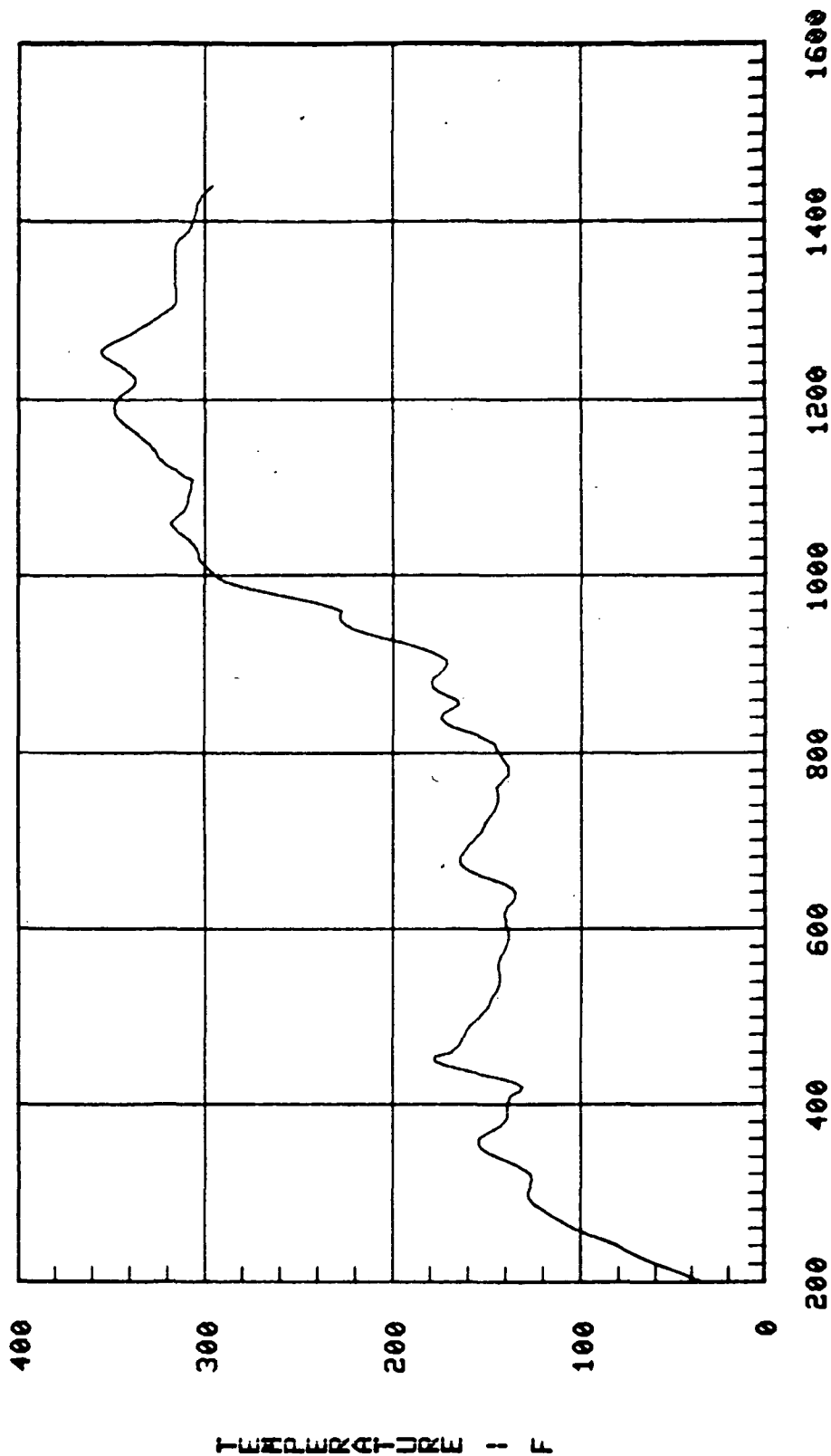
# STS-2 (107 FT LENGTH SIDE FUS $X/L=0.85$ ) $Z=400$

U09T9736A



STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

U09T9736A



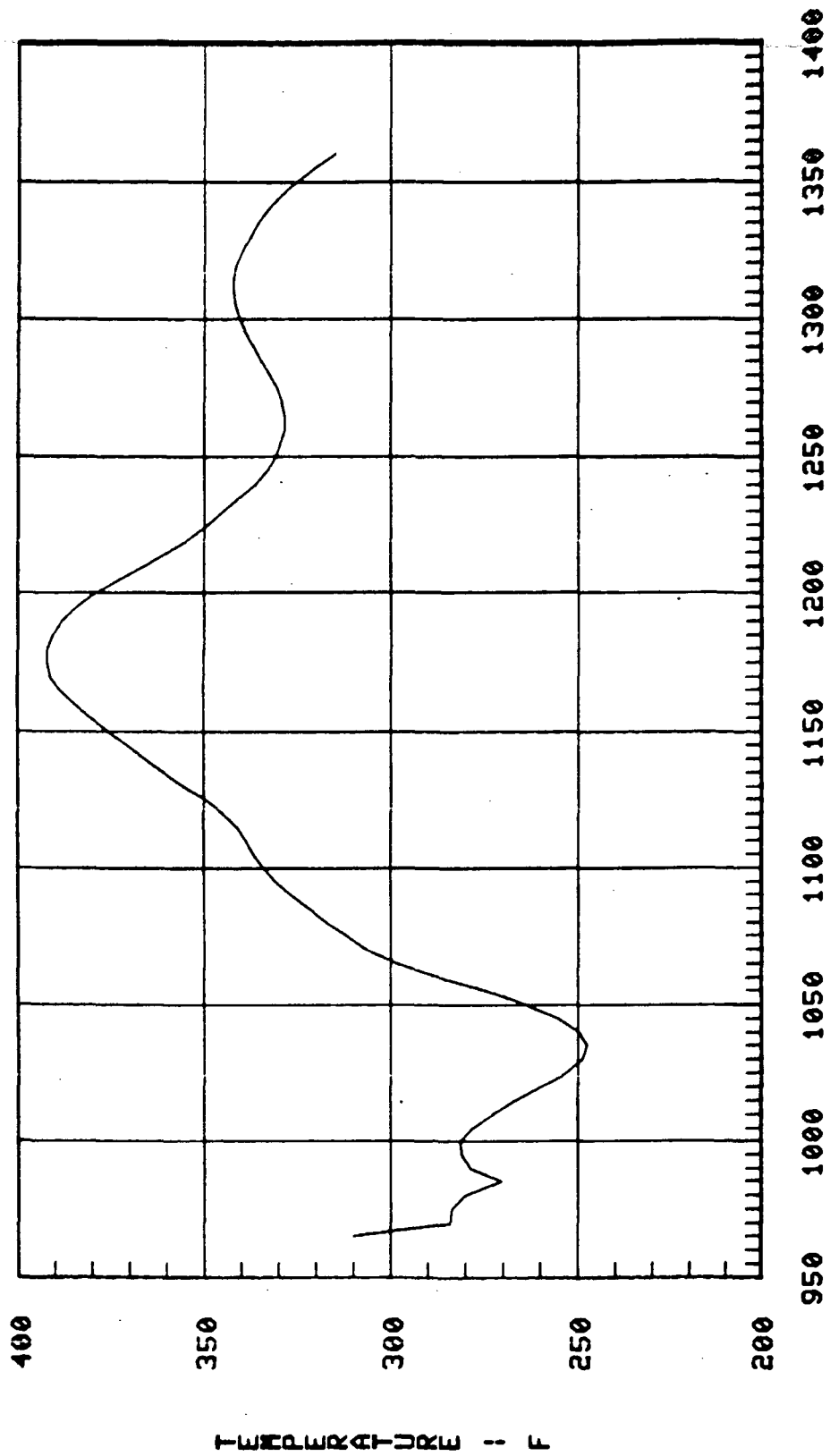
TIME - SECONDS

01/11/84



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.85$ )  $Z=400$

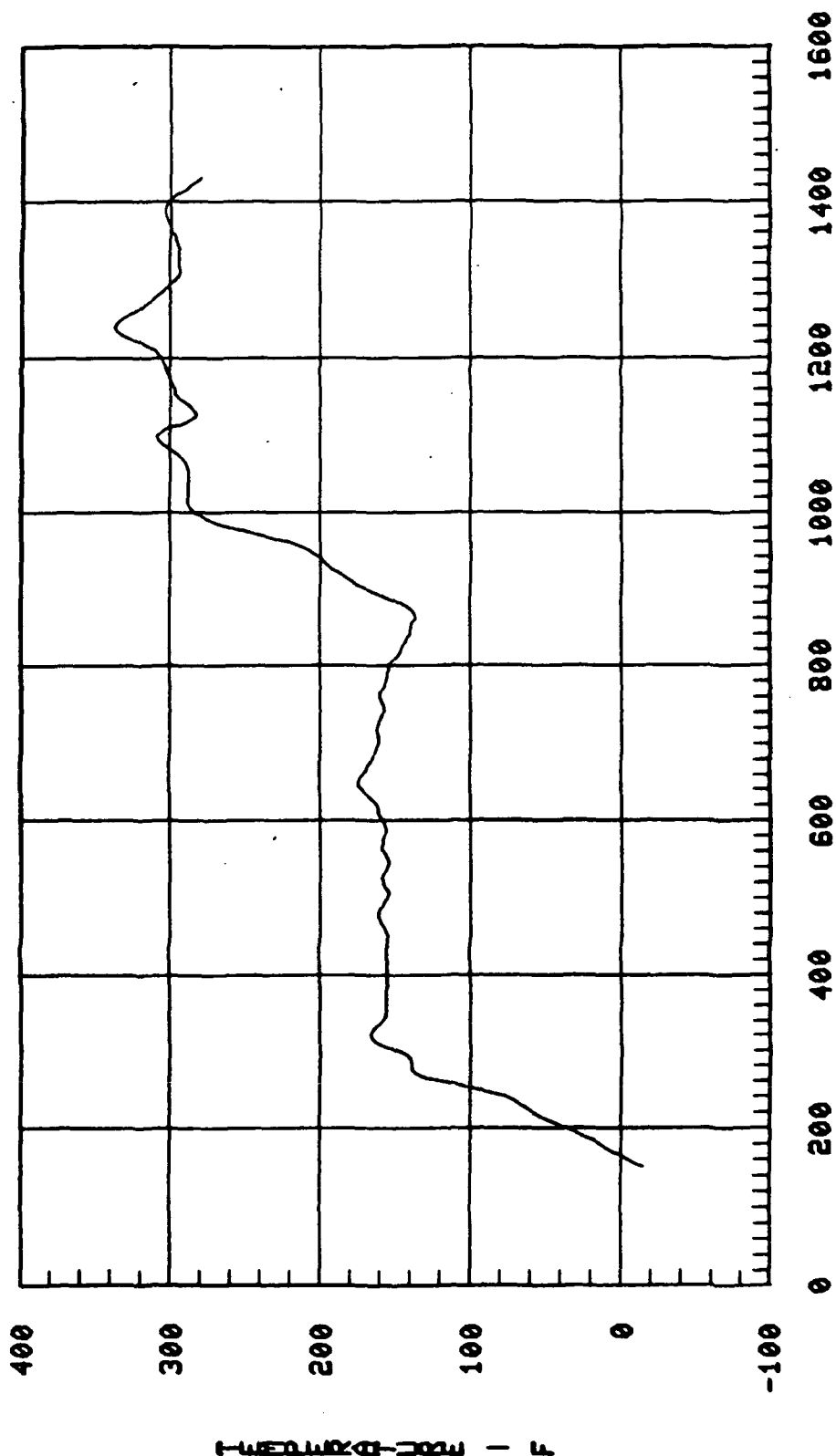
U09T9736A



01/18/84

STS-5 (107 FT LENGTH SIDE FUS X/L=0.85) Z=400

U09T0736A



TIME - SECONDS

01/18/84

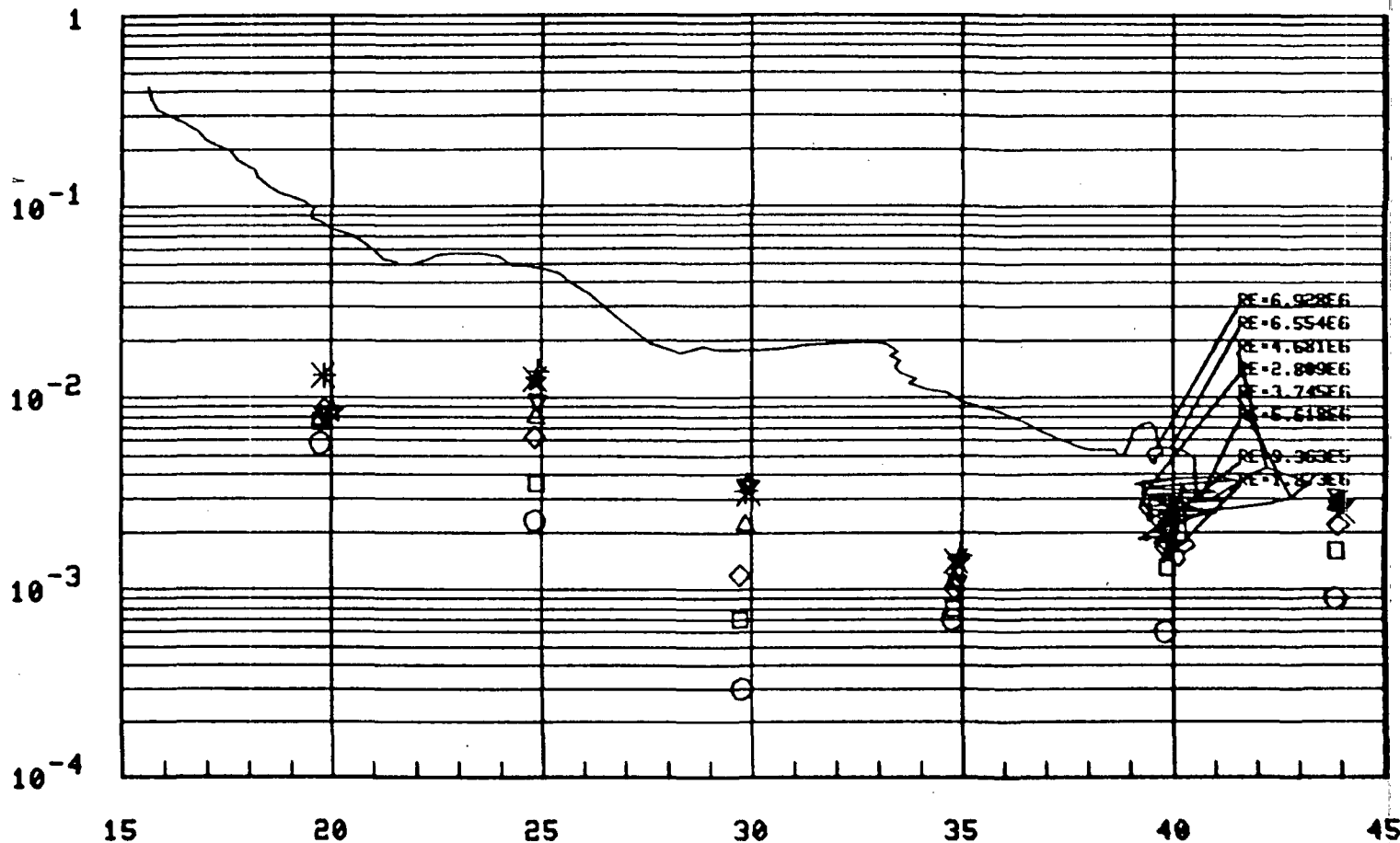
# STS-3 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9244A/H-REF 200-1440 SEC

WAVE COEFF - H/I-OVAL



ANGLE-OF-ATTACK - DEG

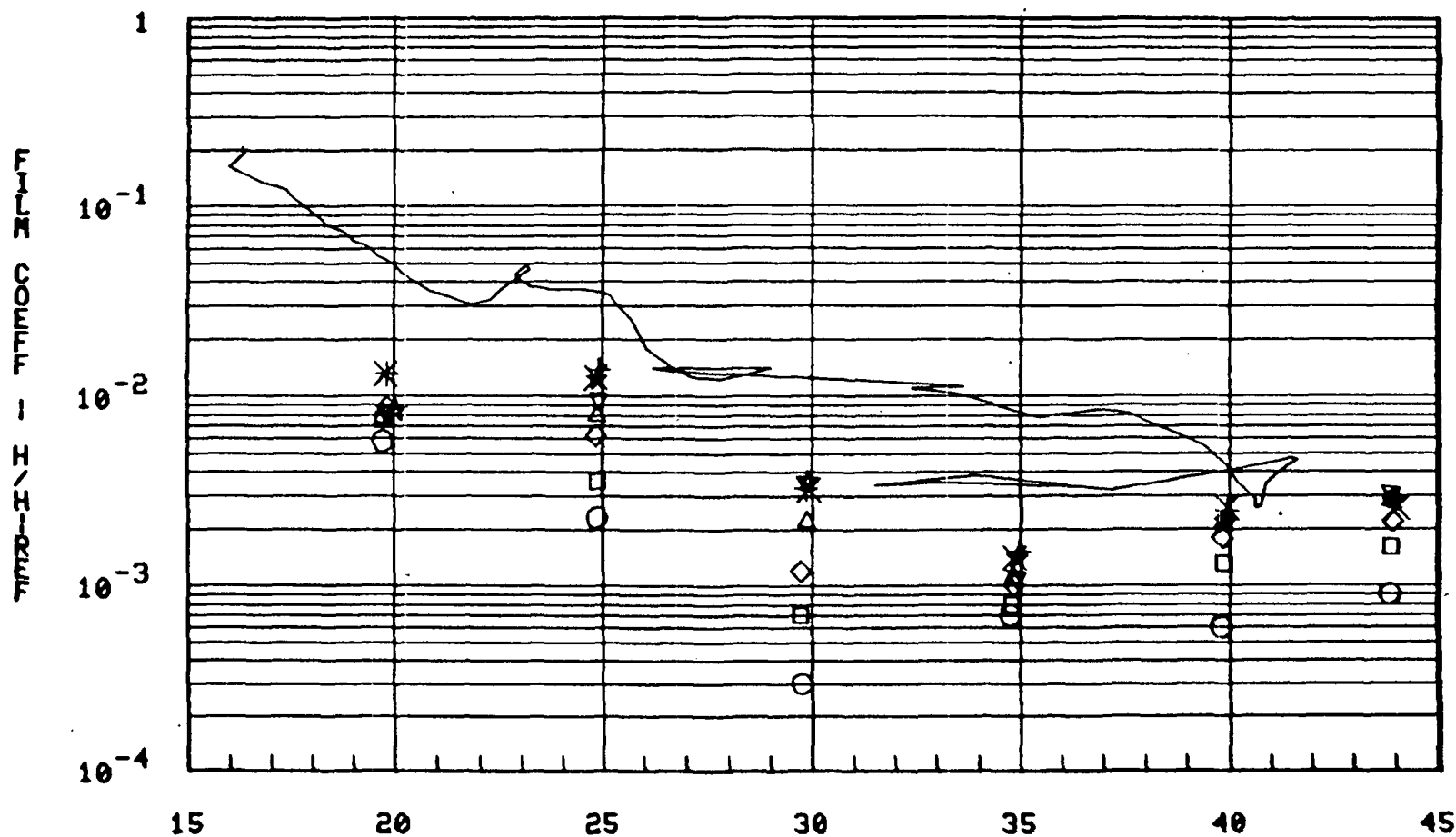
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U07T9244A/H-REF 965-1360 SEC



B-347

01/12/84  
BASE TIME • 16040423.000 SEC.

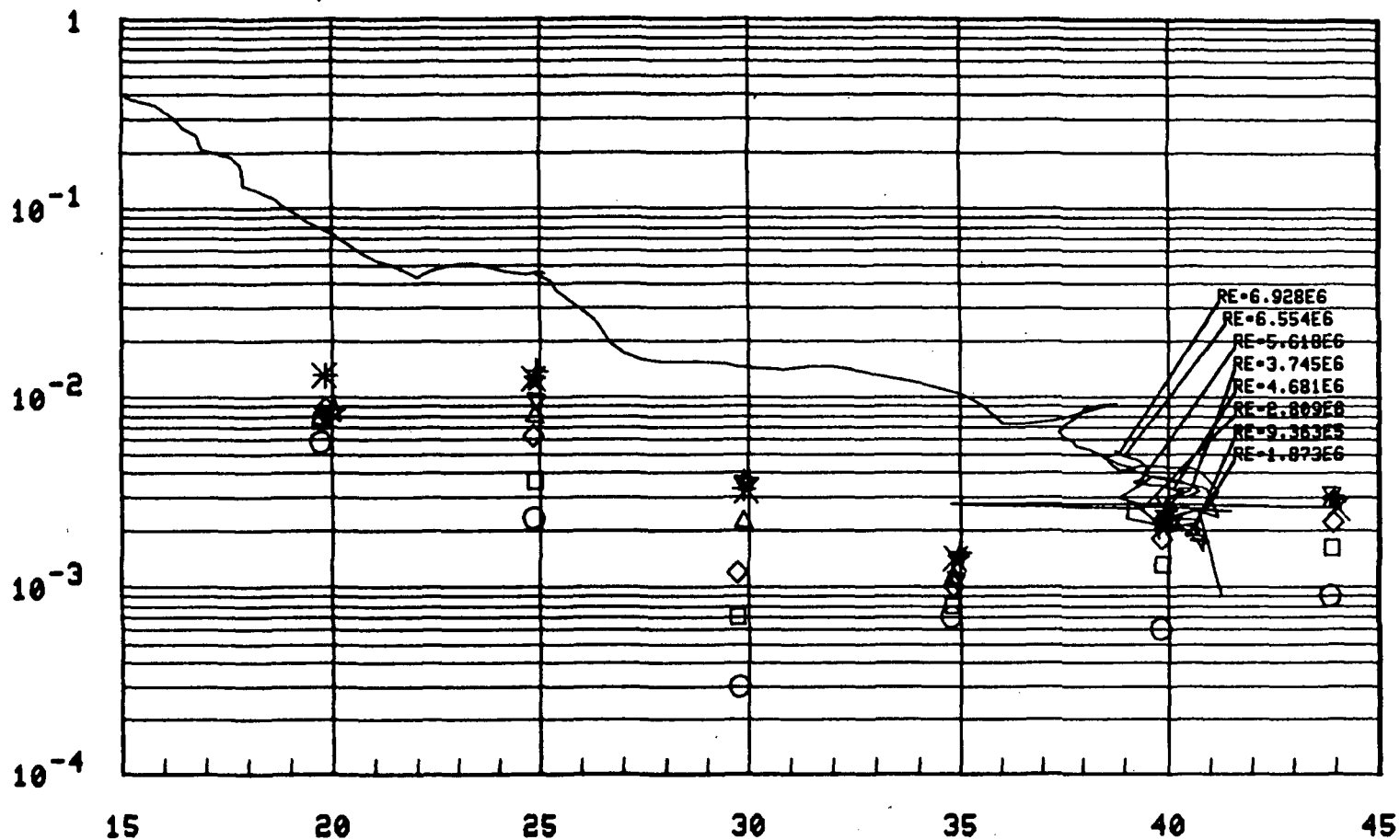
# STS-5 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

○  
◇  
△  
★  
+  
×

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U07T9244A/H-REF 150-1430 SEC

WAVE COUNT - I/I-0244

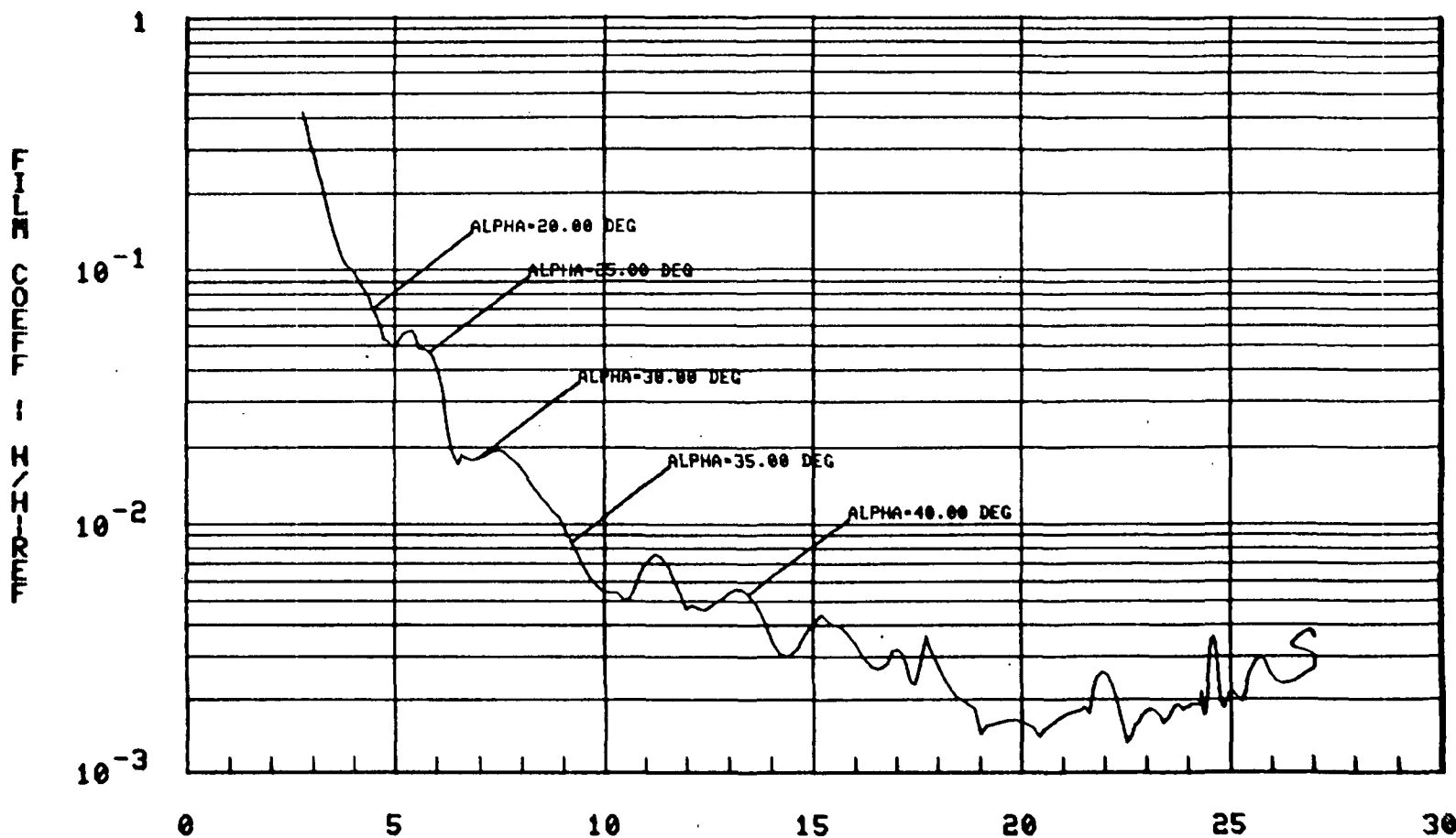


ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME • 27698591.000 SEC.

STS-3 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

U07T9244A/H-REF 200-1440 SEC



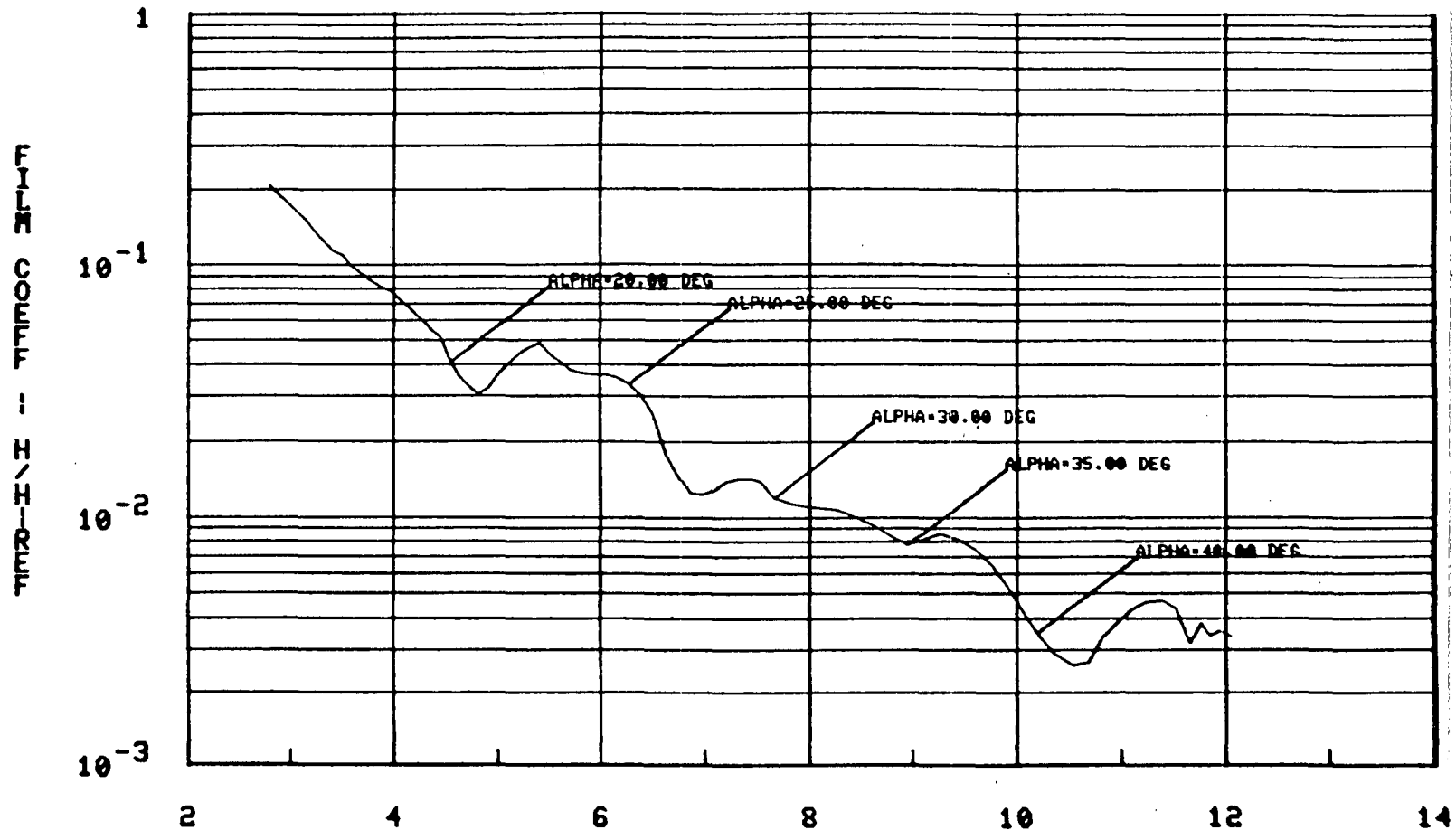
B-349

MACH NUMBER

01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.90$ ) $Z=400$

U07T9244A/H-REF 965-1360 SEC



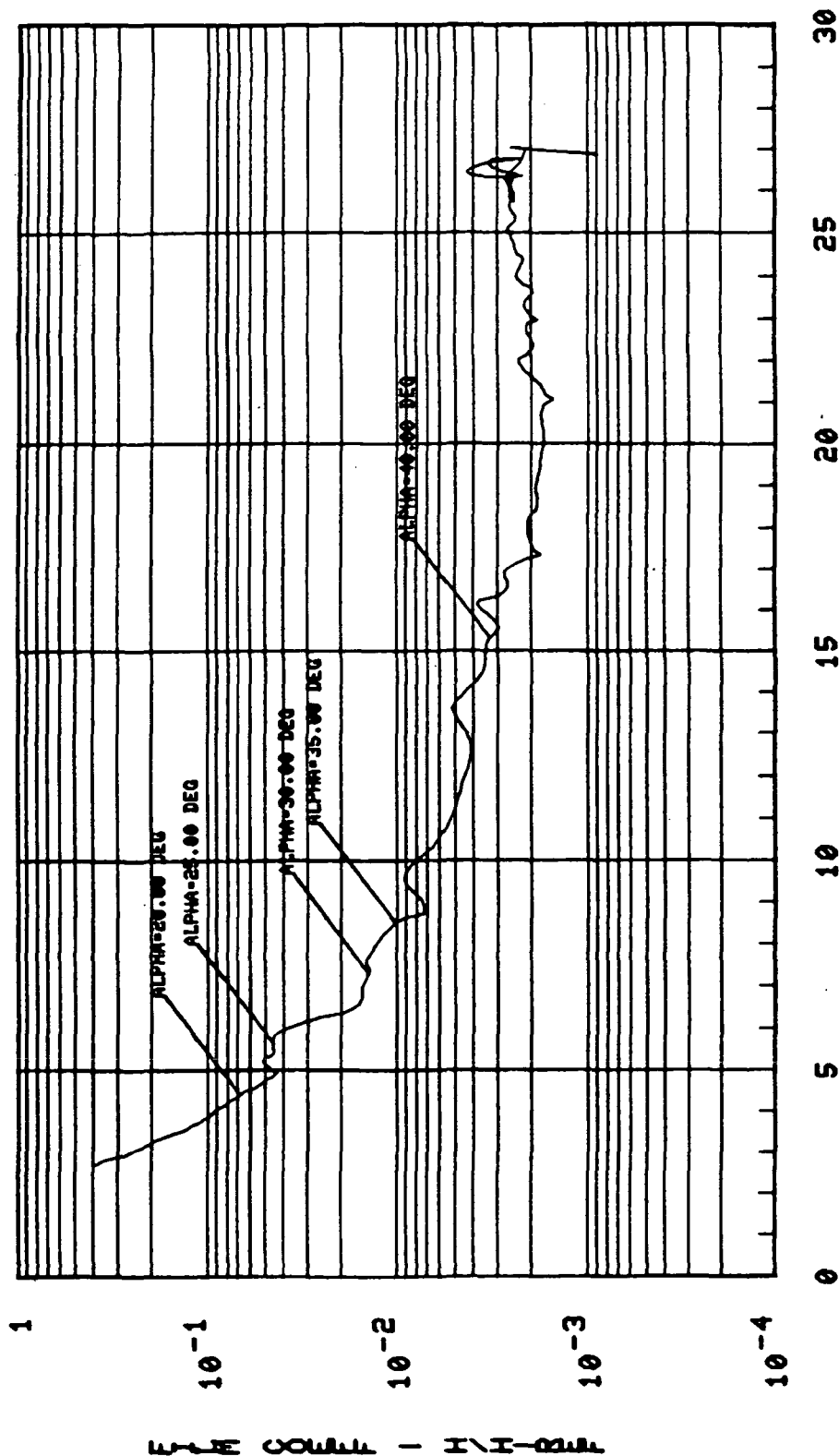
B-350

MACH NUMBER

01/12/84  
BASE TIME = 10040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

U07T9244A/H-REF 150-1430 SEC



01/12/84  
BASE TIME - 27698591.000 SEC.

MACH NUMBER

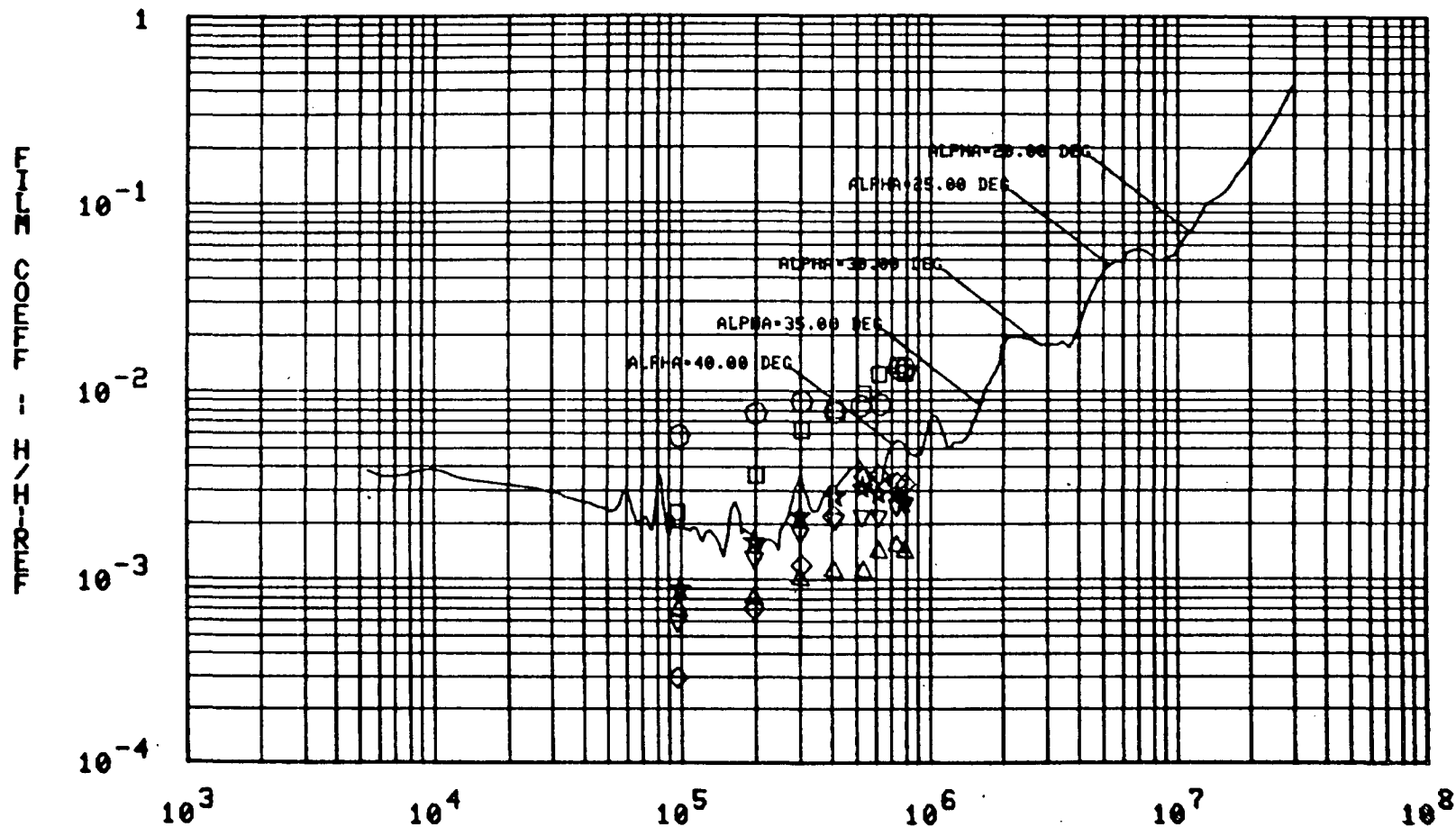


# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.90$ ) $Z=400$

○  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9244A/H-REF 200-1440 SEC



REYNOLDS NUMBER (NS)

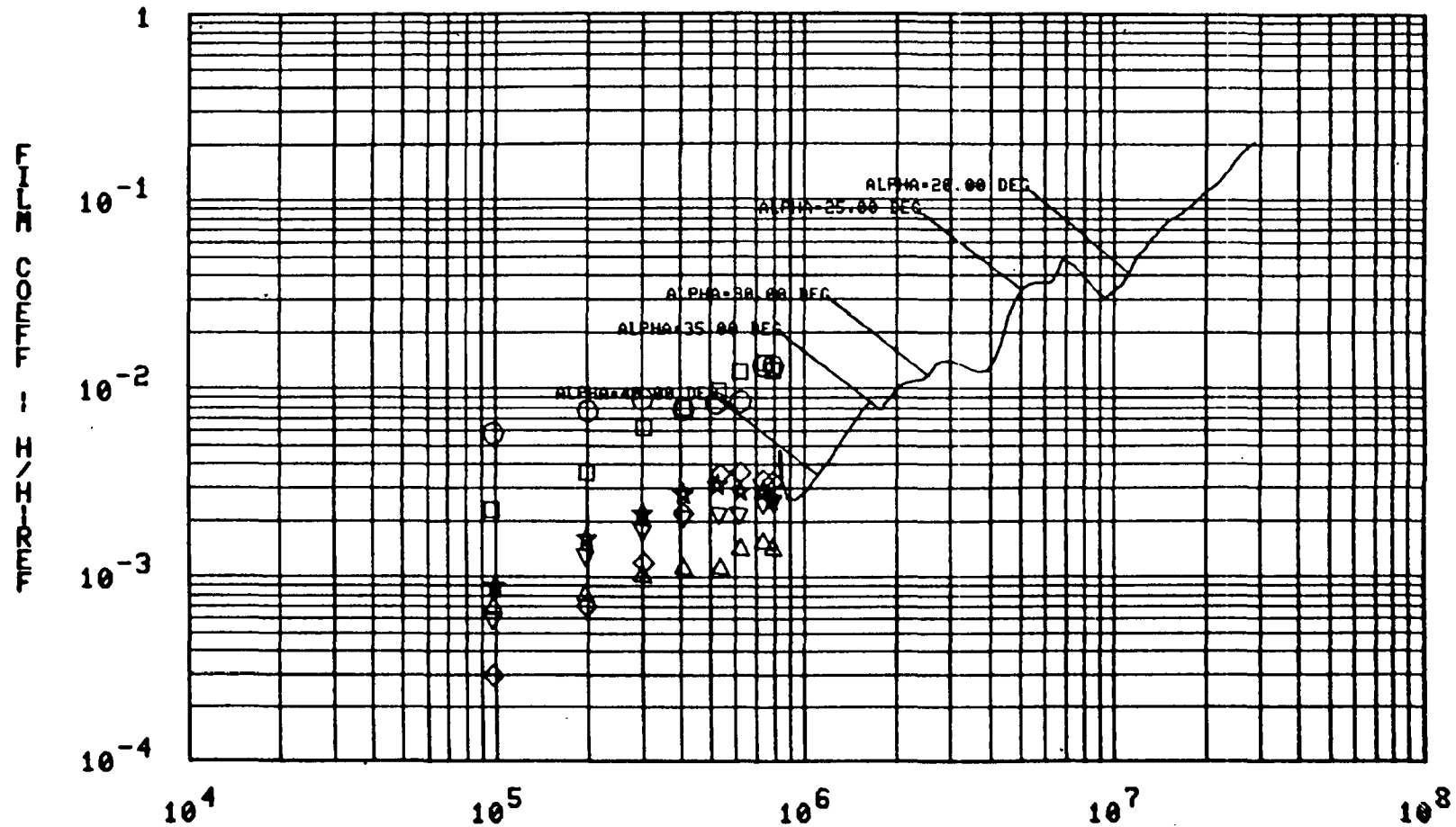
01/11/84  
BASE TIME = 07745624.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.90$ ) $Z=400$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9244A/H-REF 965-1360 SEC



B-353

REYNOLDS NUMBER (NS)

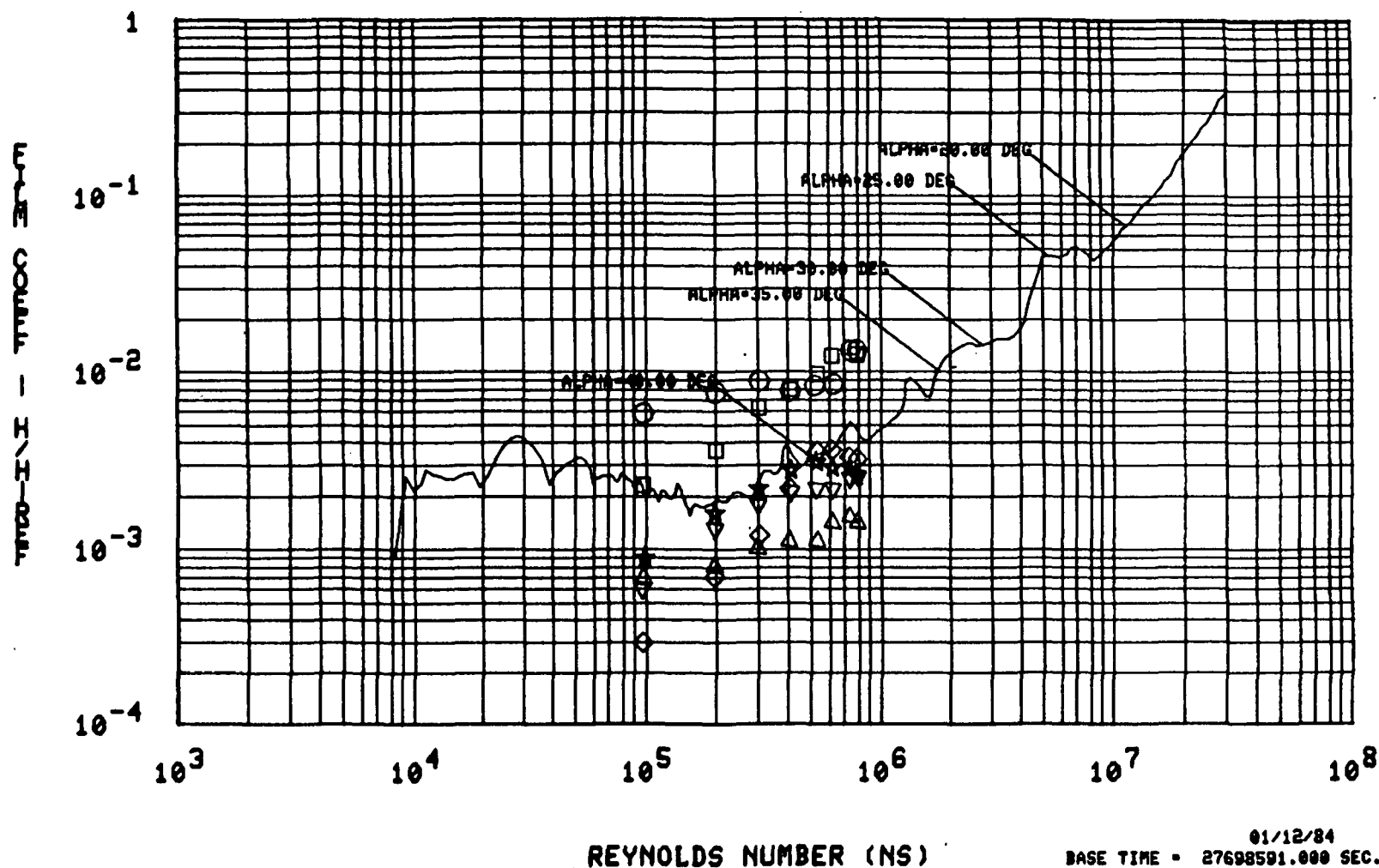
01/12/84  
BASE TIME = 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

○  
□  
◇  
△  
▽  
★

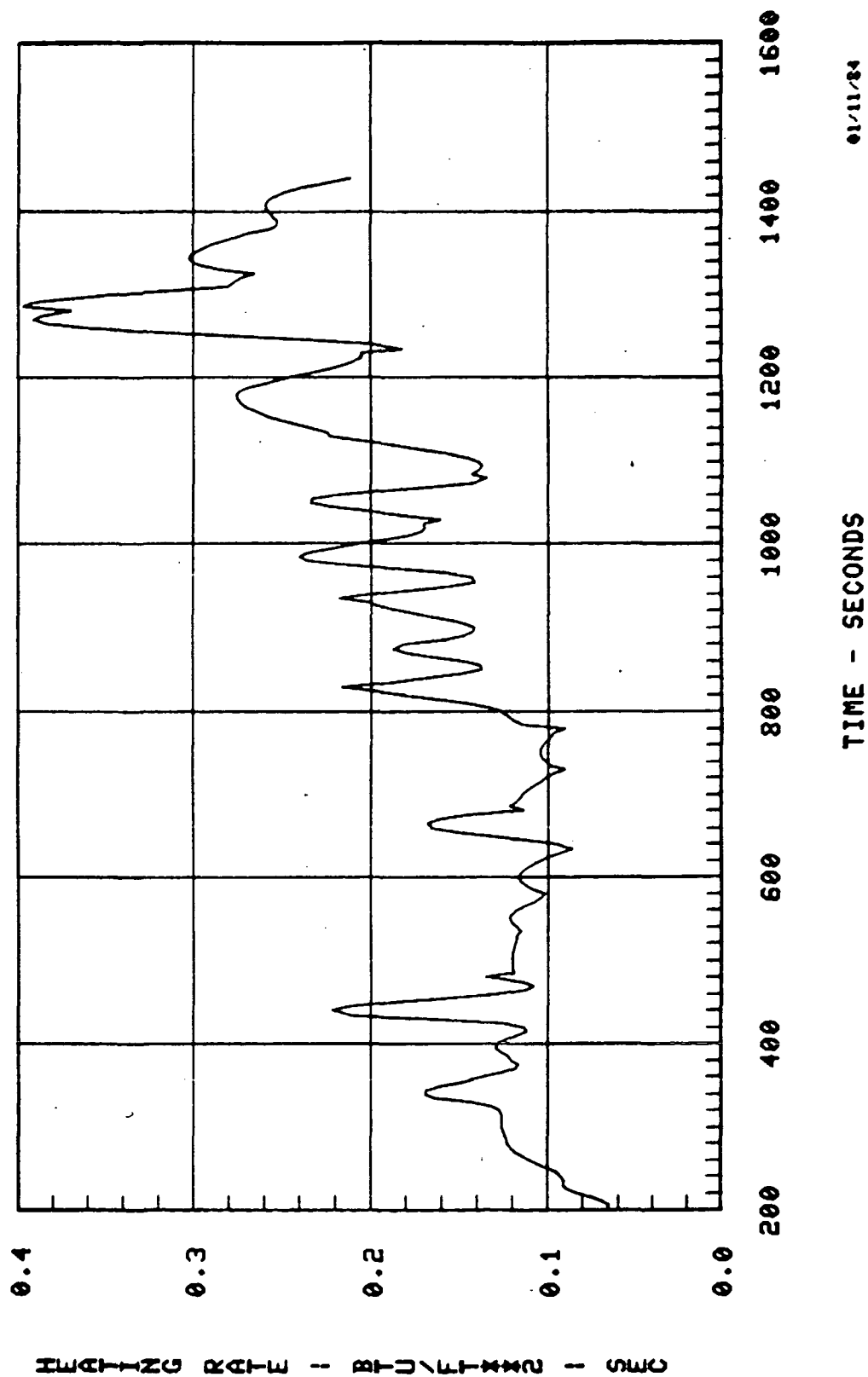
OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9244A/H-REF 150-1430 SEC



STS-3 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

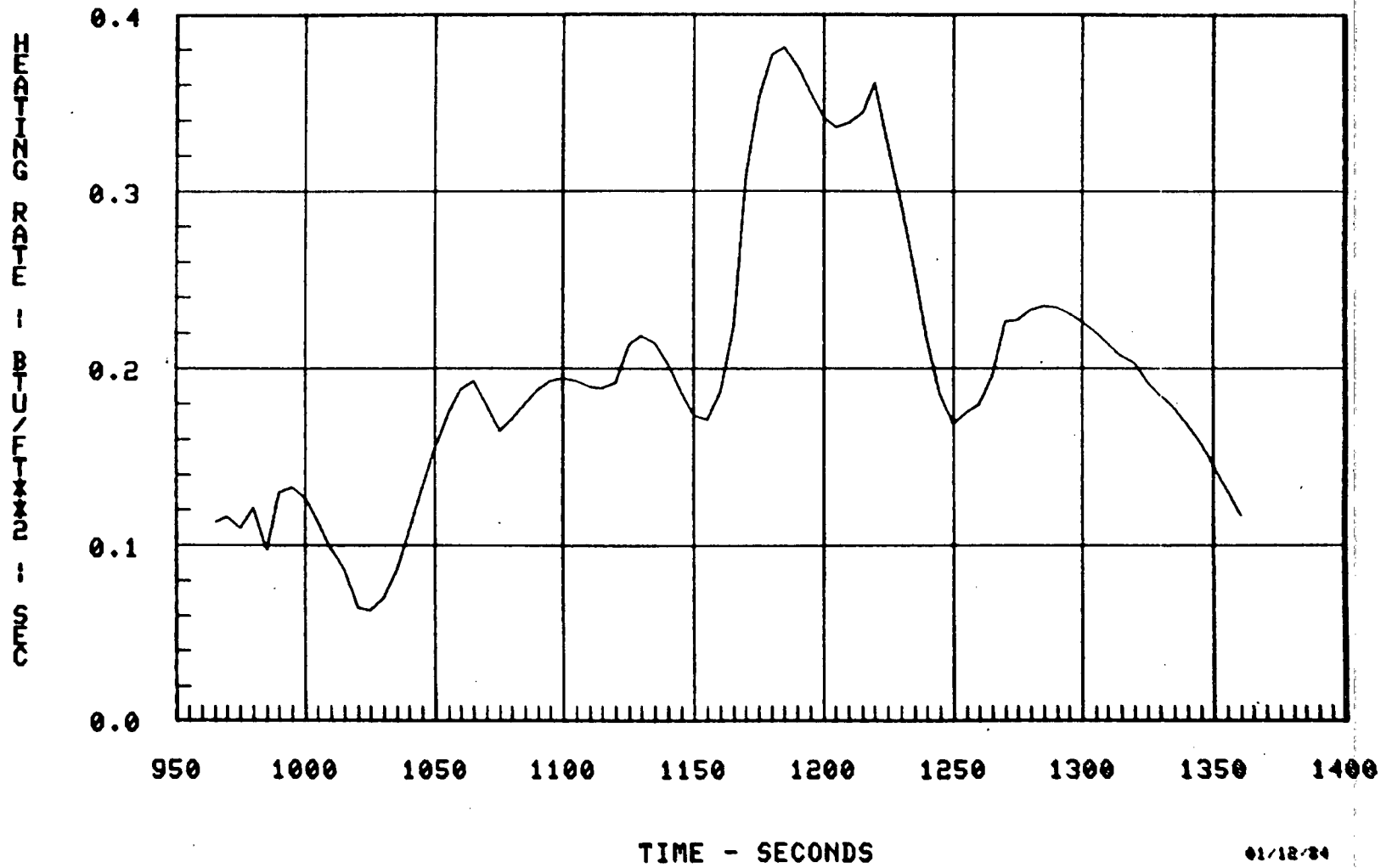
U07T9244A



01/11/84

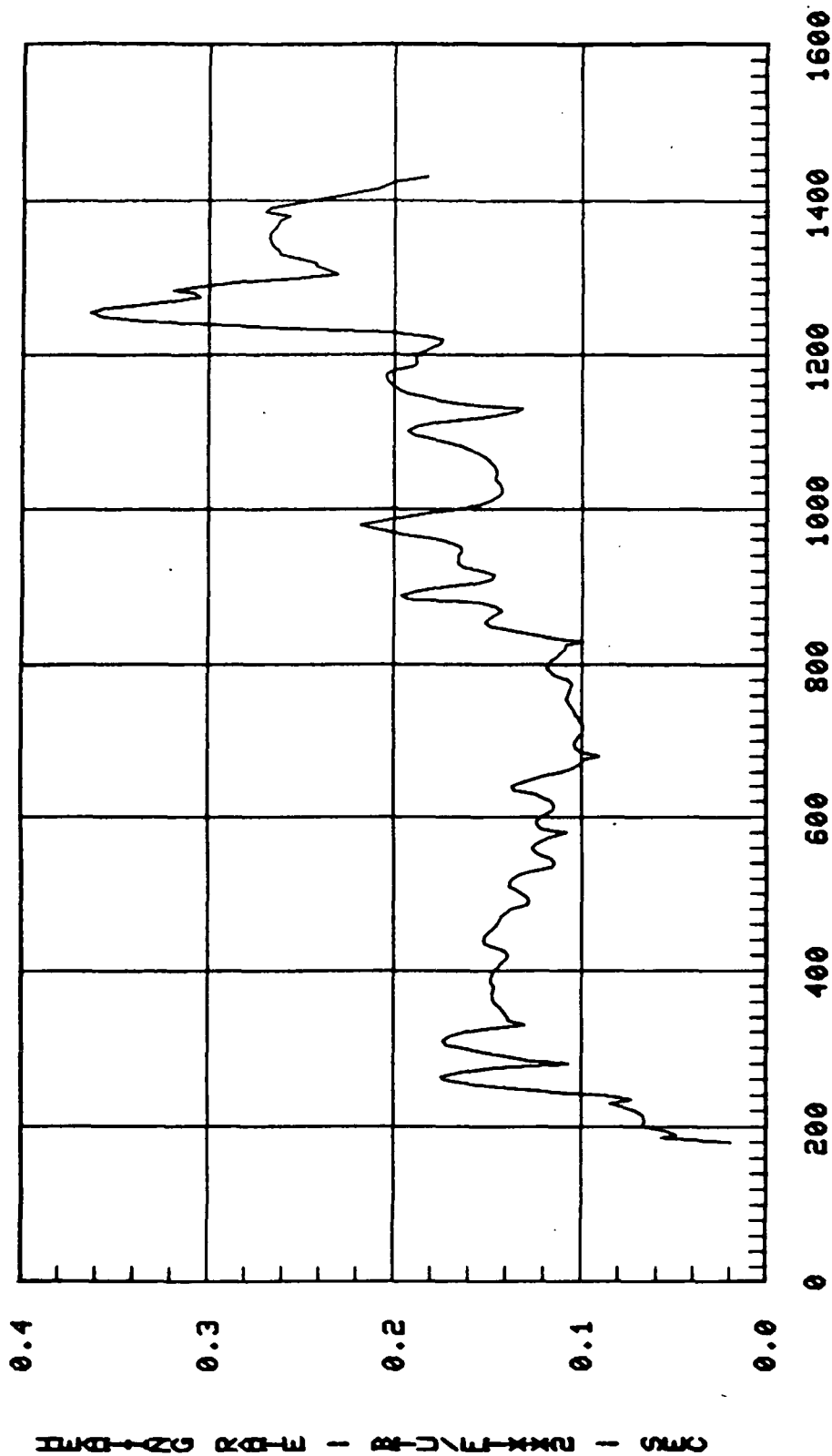
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.90$ )  $Z=400$

U07T9244A



STS-5 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

U07T9244A

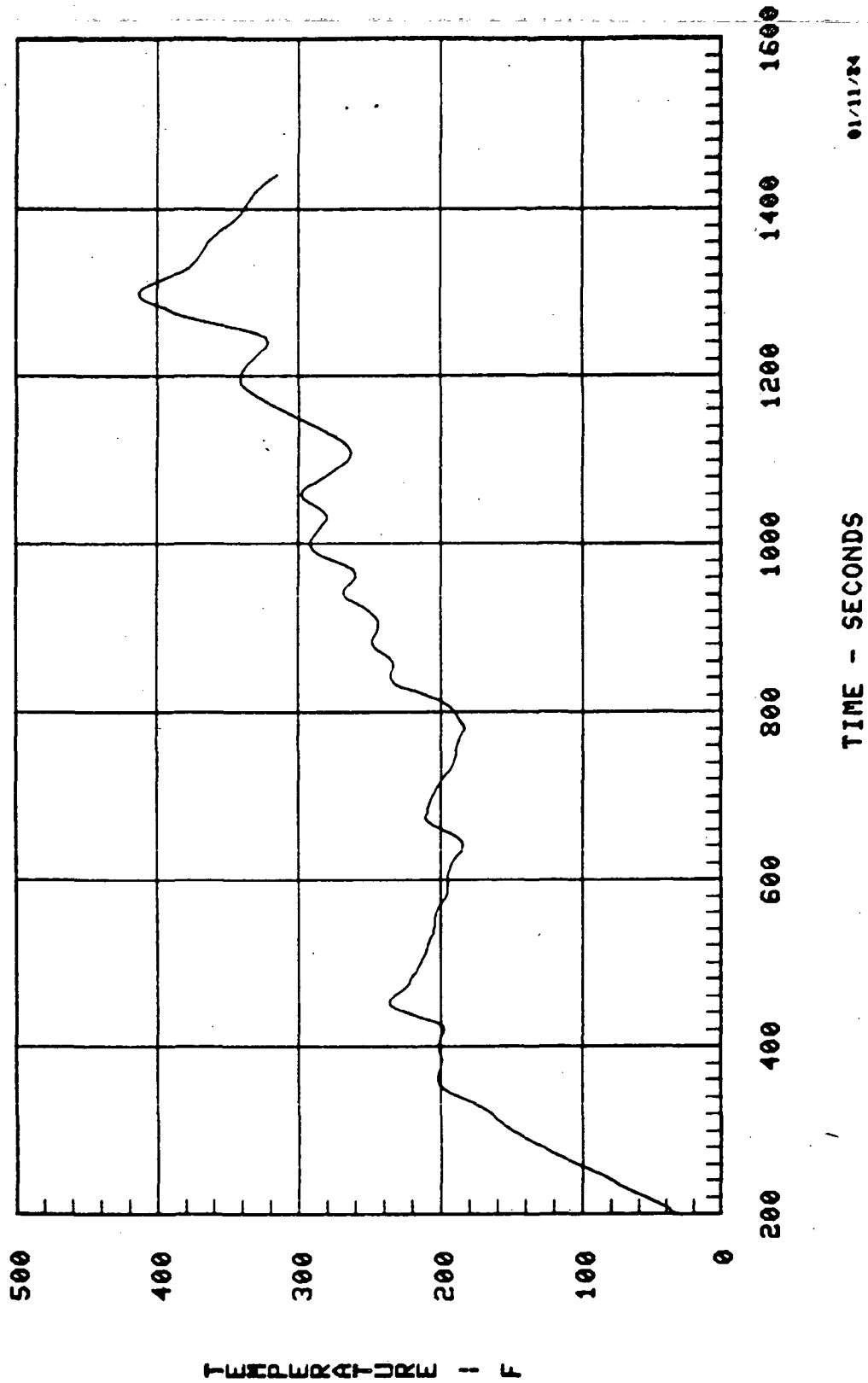


TIME - SECONDS

01/12/84

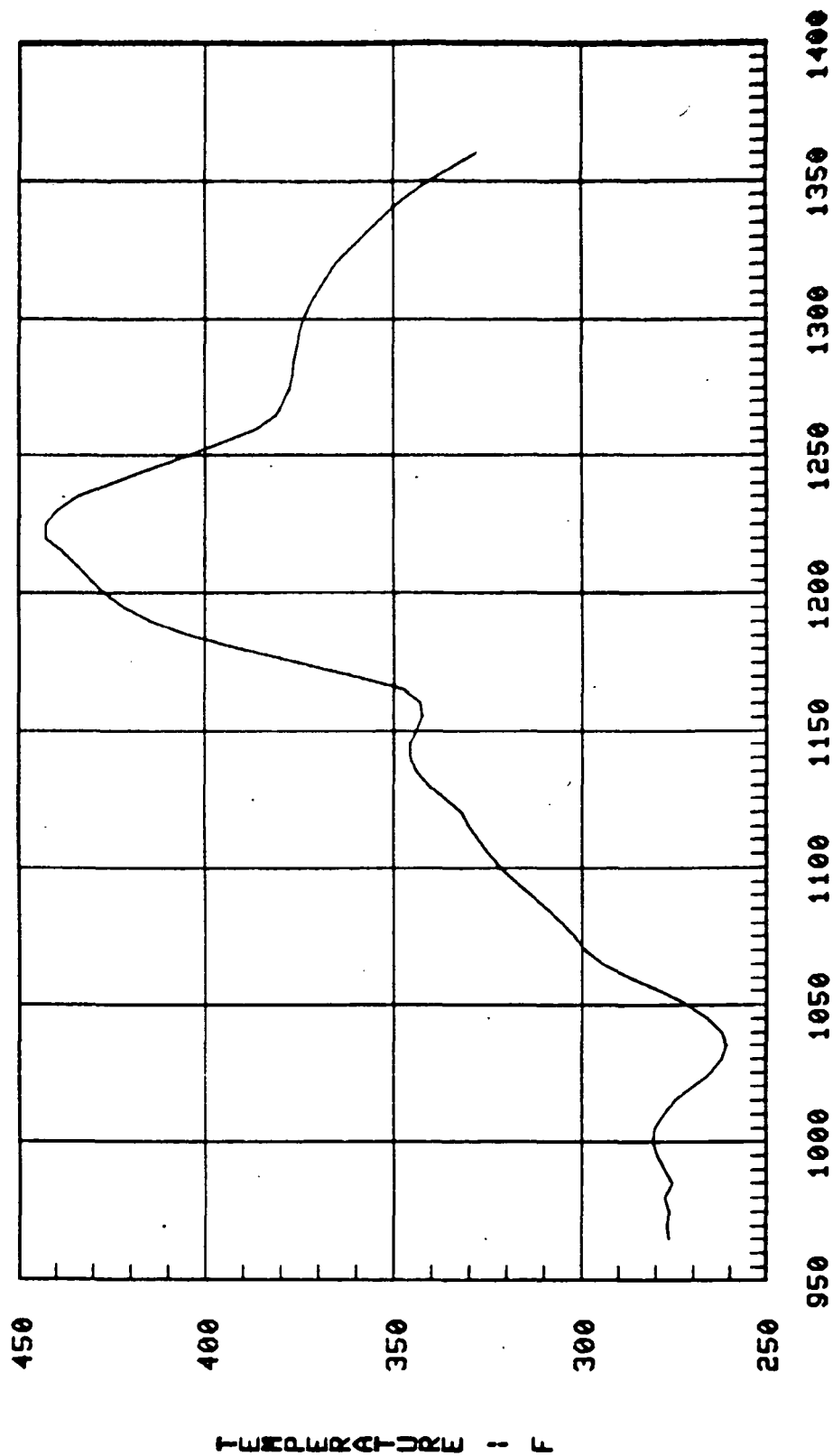
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.90$ )  $Z=400$

U07T9244A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.90$ )  $Z=400$

U07T9244A



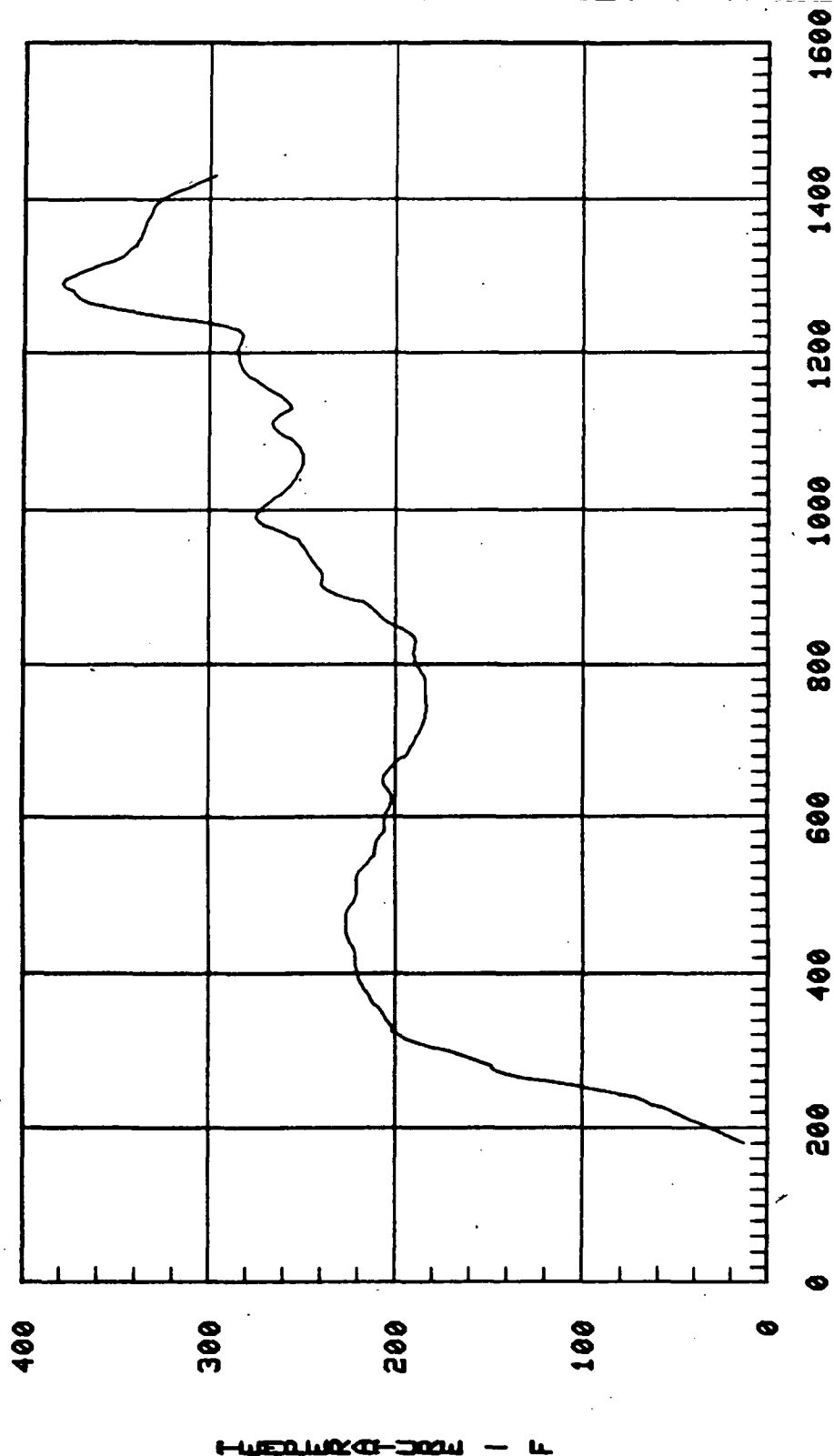
TIME - SECONDS

01/12/84



STS-5 (107 FT LENGTH SIDE FUS X/L=0.90) Z=400

U07T9244A



TIME - SECONDS

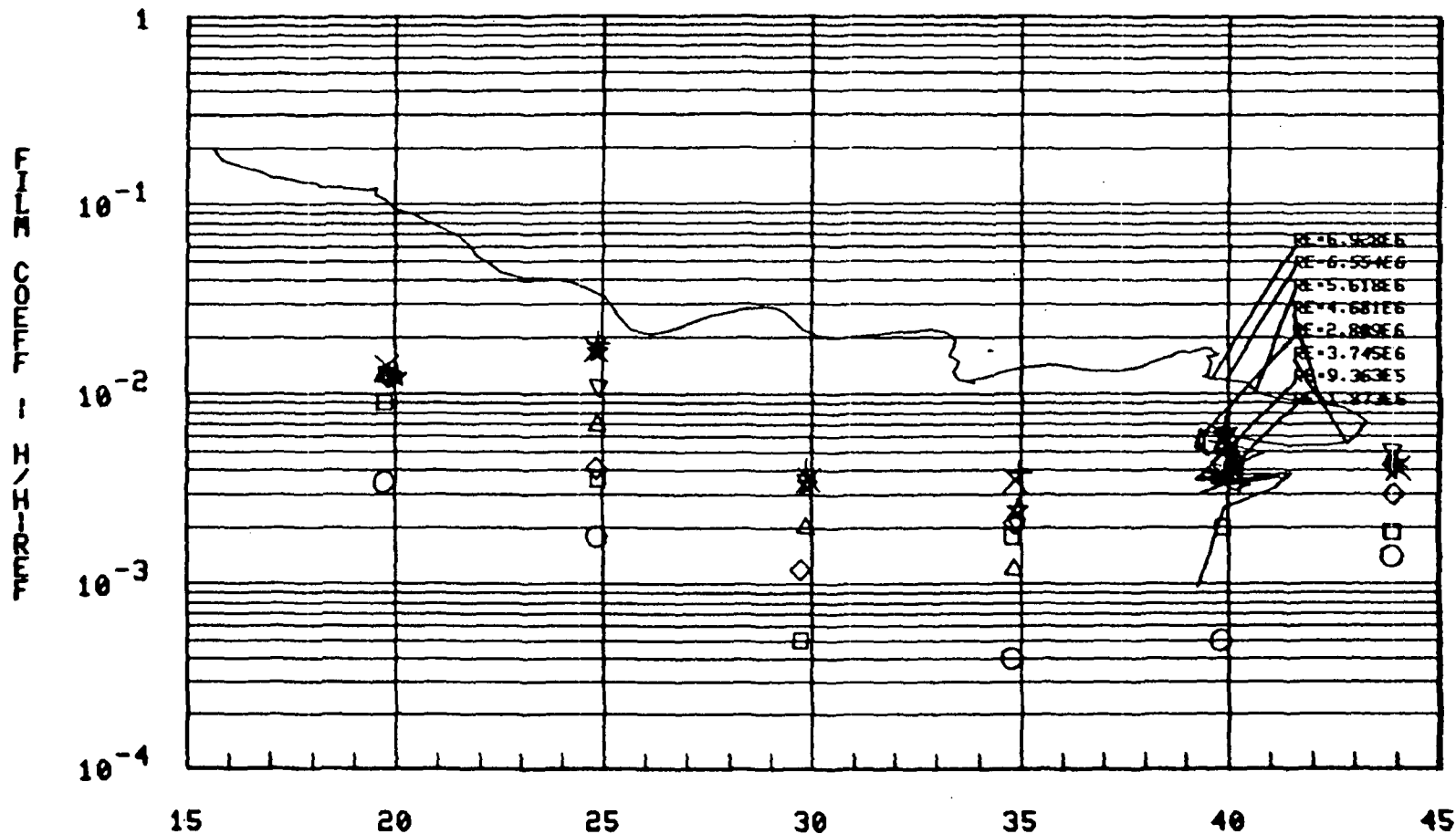
01/12/84

# STS-3 (107 FT LENGTH SIDE FUS X/L=0.98) Z=400

O  
□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9247A/H-REF 200-1440 SEC



ANGLE-OF-ATTACK - DEG

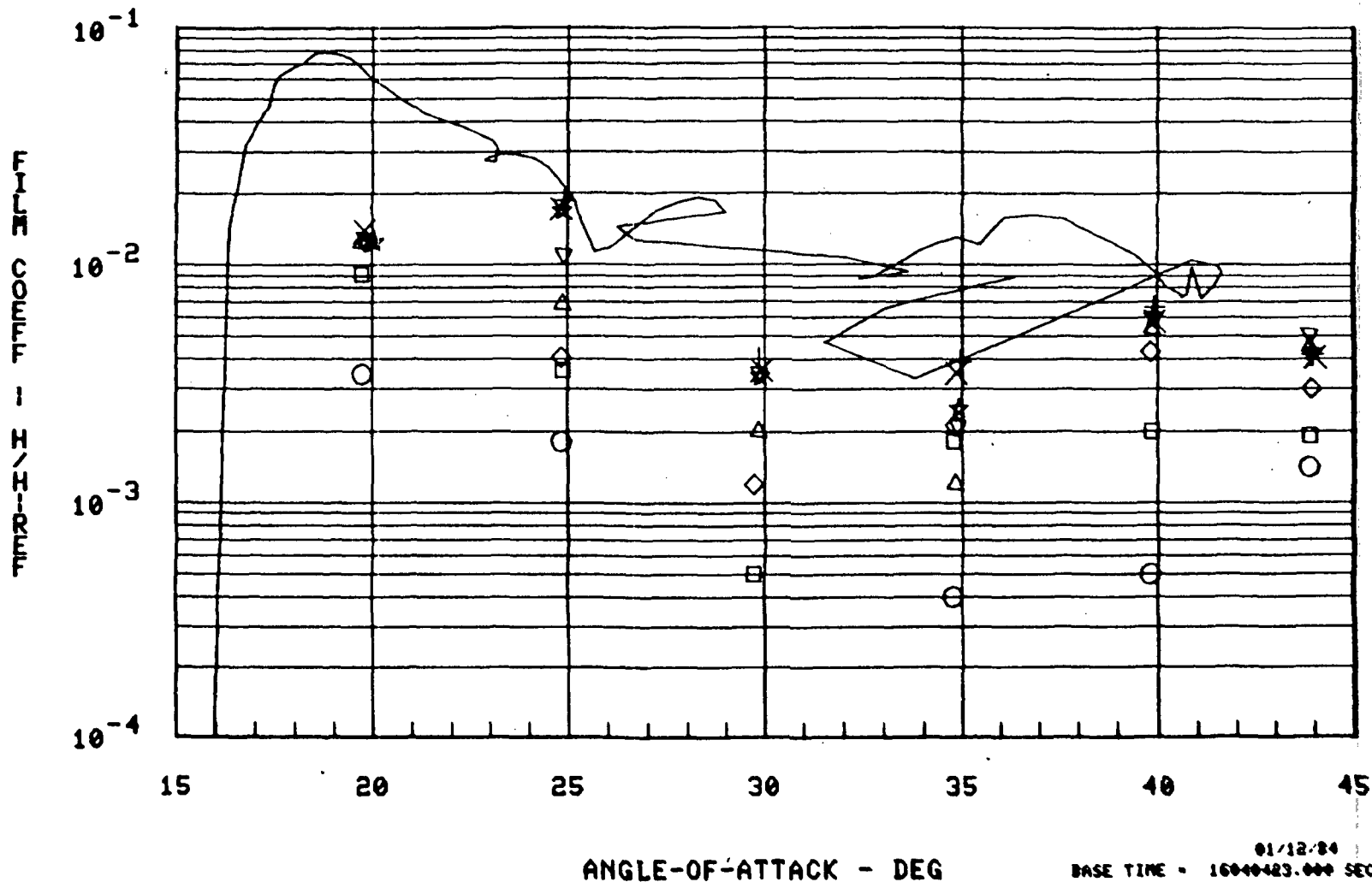
01/11/84  
BASE TIME = 07745024.000 SEC.

# STS-4 (107 FT LENGTH SIDE FUS X/L=0.98) Z=400

○  
□  
◇  
△  
▽  
★  
+  
×

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

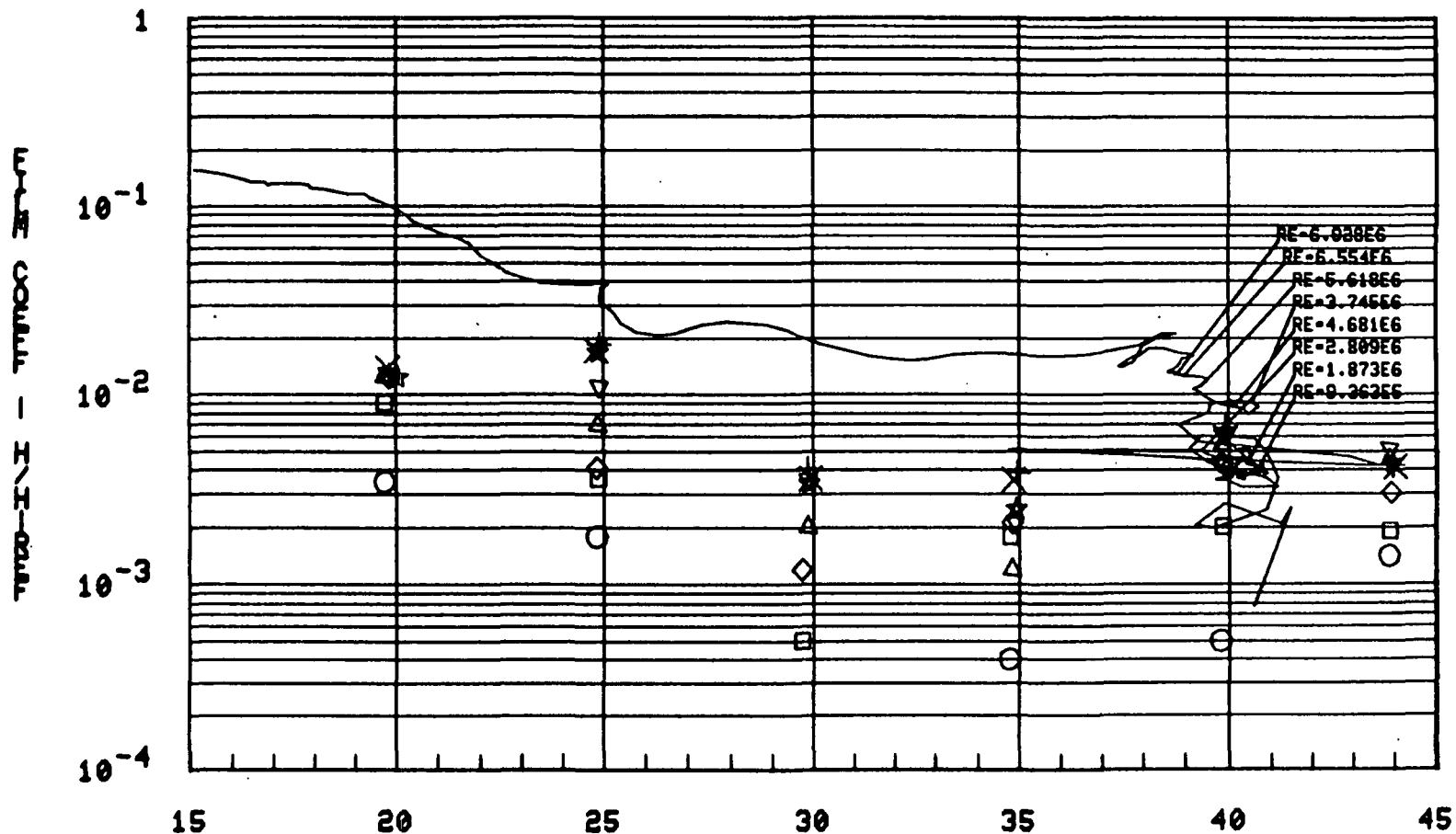
U07T9247A/H-REF 965-1360 SEC



# STS-5 (107 FT LENGTH SIDE FUS $X/L=0.98$ ) $Z=400$

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9247A/H-REF 150-1430 SEC

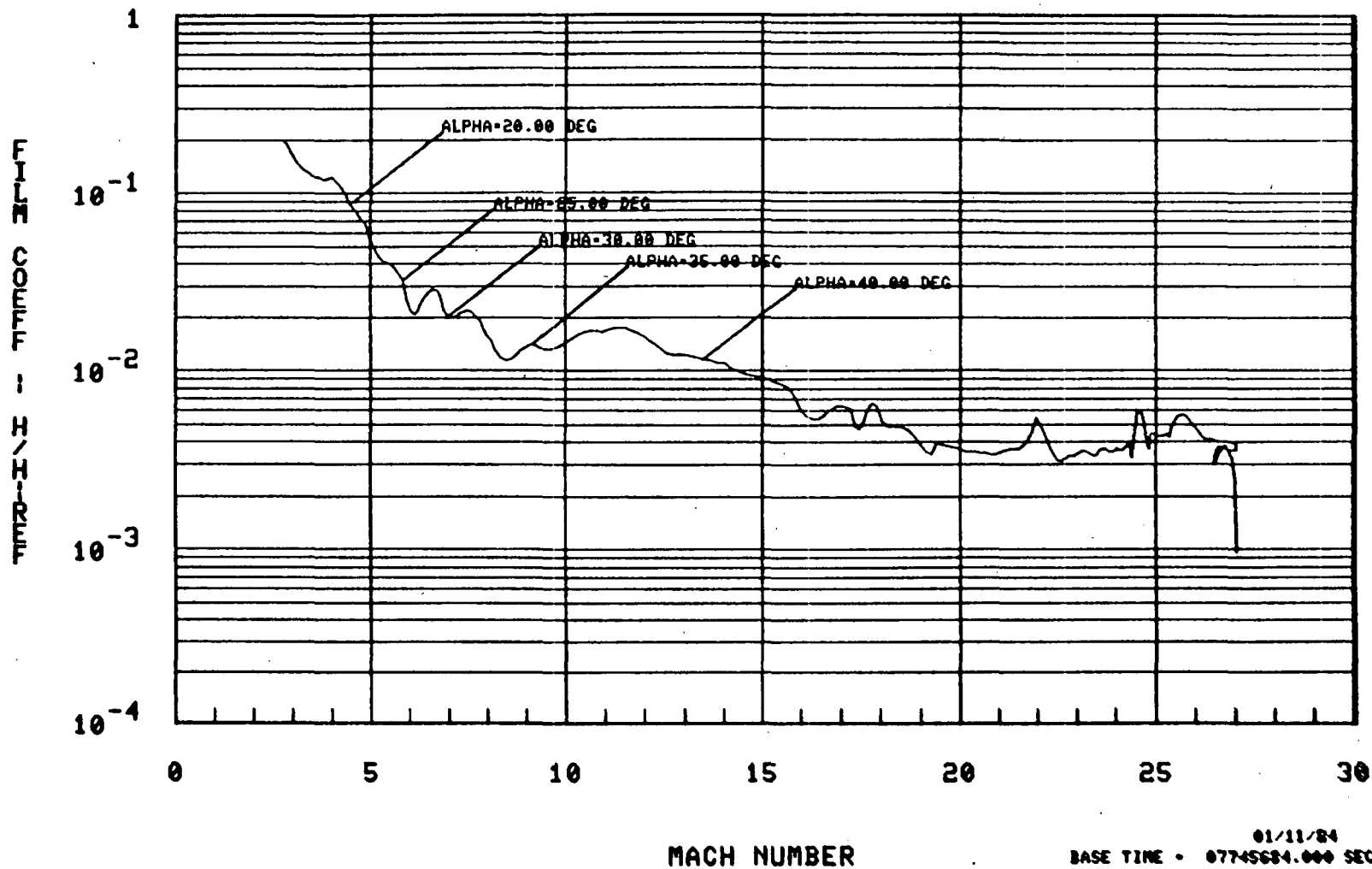


ANGLE-OF-ATTACK - DEG

01/12/84  
 BASE TIME = 27698591.000 SEC.

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.98$ ) $Z=400$

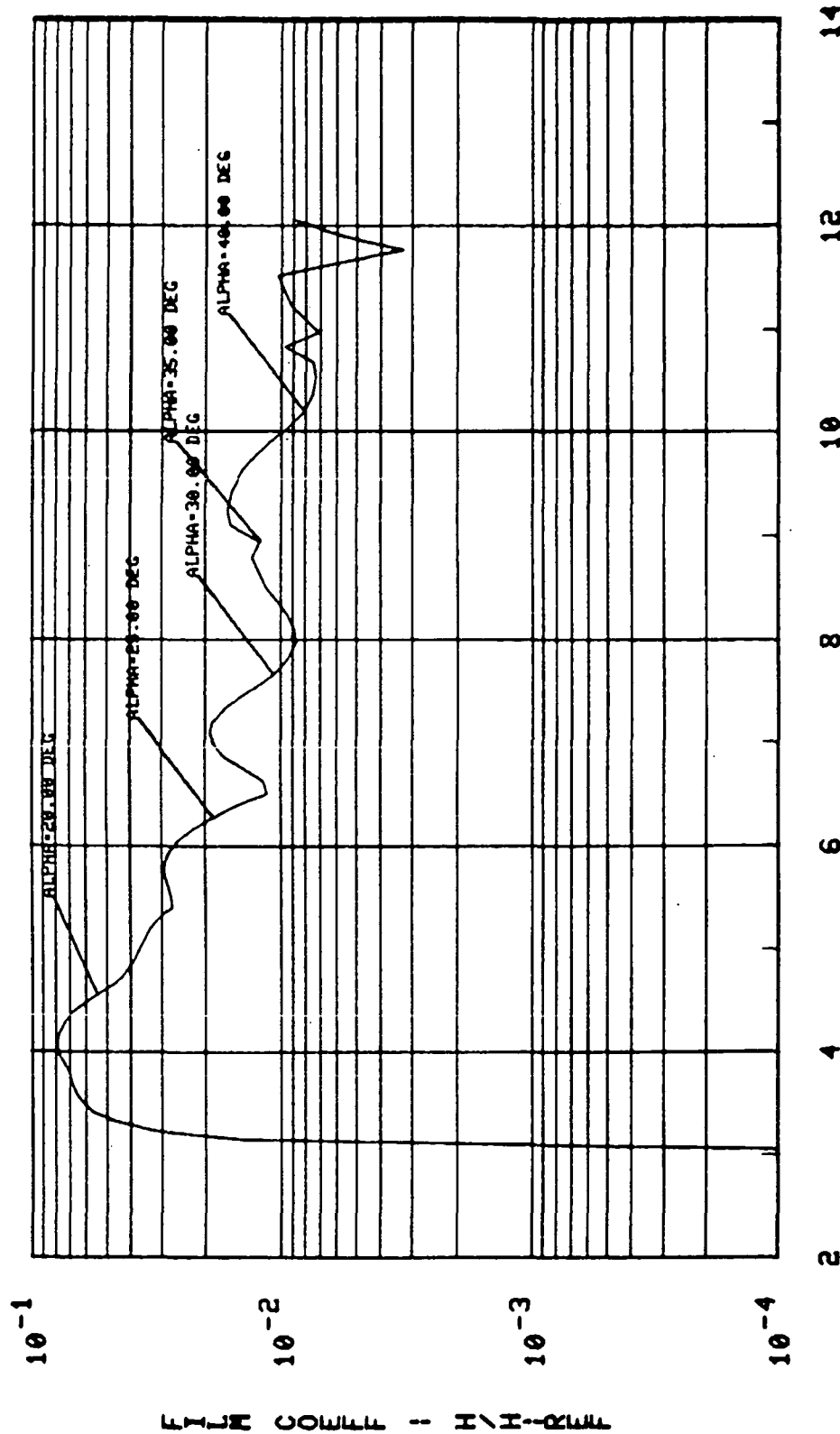
U07T9247A/H-REF 200-1440 SEC



B-364

# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.98$ ) $Z=400$

U07T9247A/H-REF 965-1360 SEC

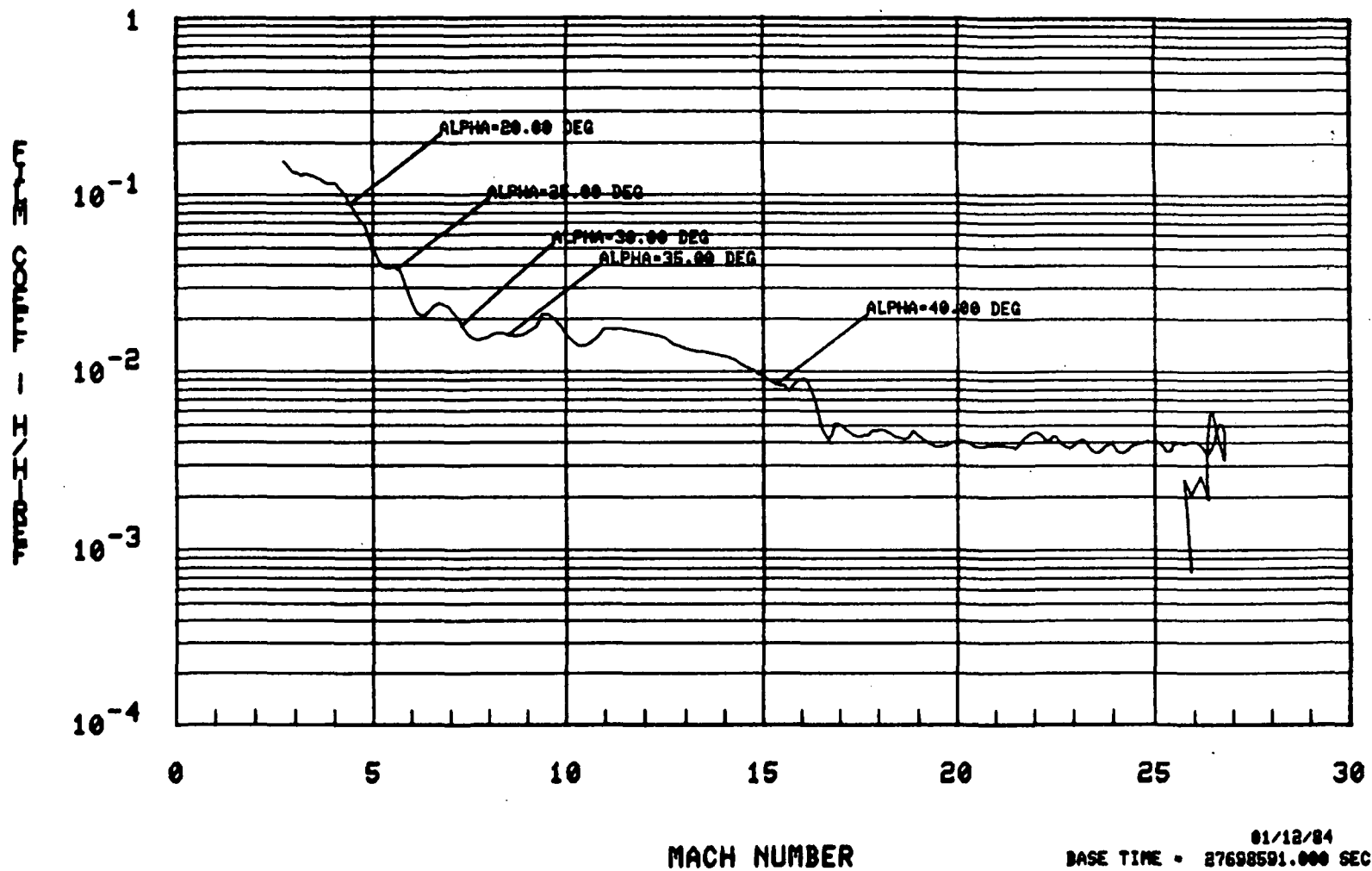


01/12/84  
BASE TIME - 1600023.000 SEC.

MACH NUMBER

# STS-5 (107 FT LENGTH SIDE FUS X/L=0.98) Z=400

U07T0247A/H-REF 150-1430 SEC



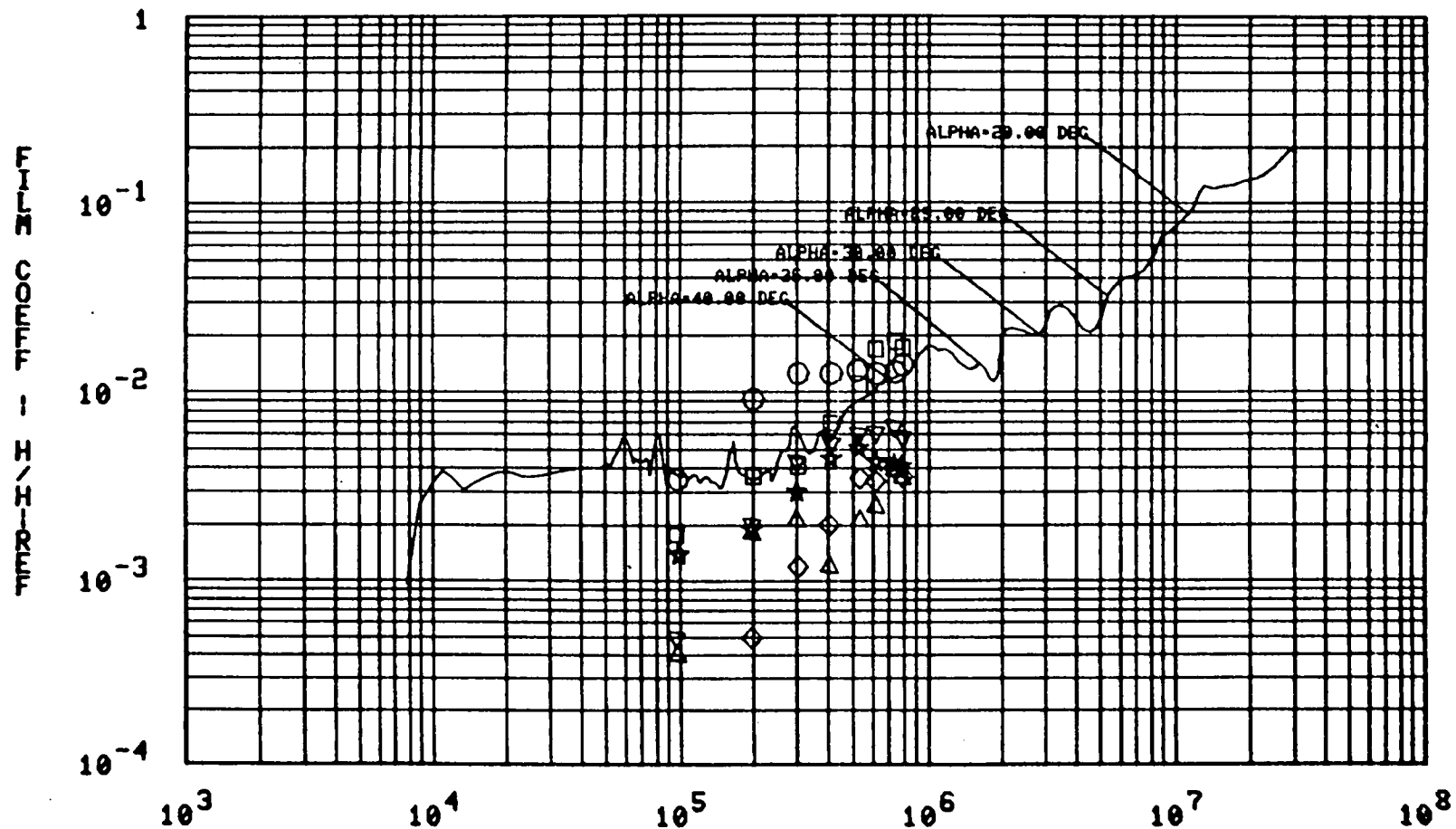
B-366

# STS-3 (107 FT LENGTH SIDE FUS $X/L=0.98$ ) $Z=400$

○  
◇  
△  
★

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9247A/H-REF 200-1440 SEC



B-367

REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME • 07745624.000 SEC.

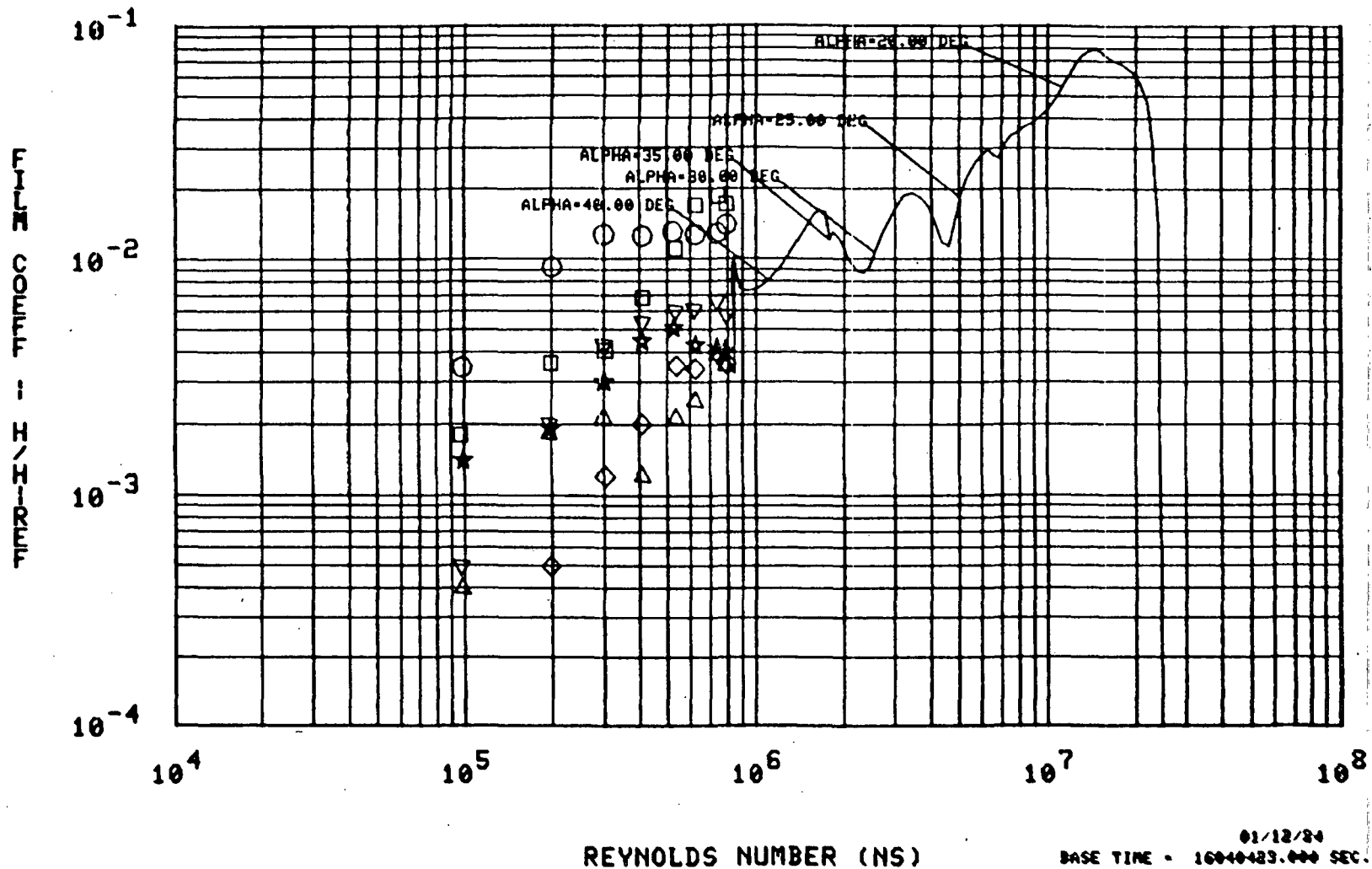


# STS-4 (107 FT LENGTH SIDE FUS $X/L=0.98$ ) $Z=400$

U07T9247A/H-REF 965-1360 SEC

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

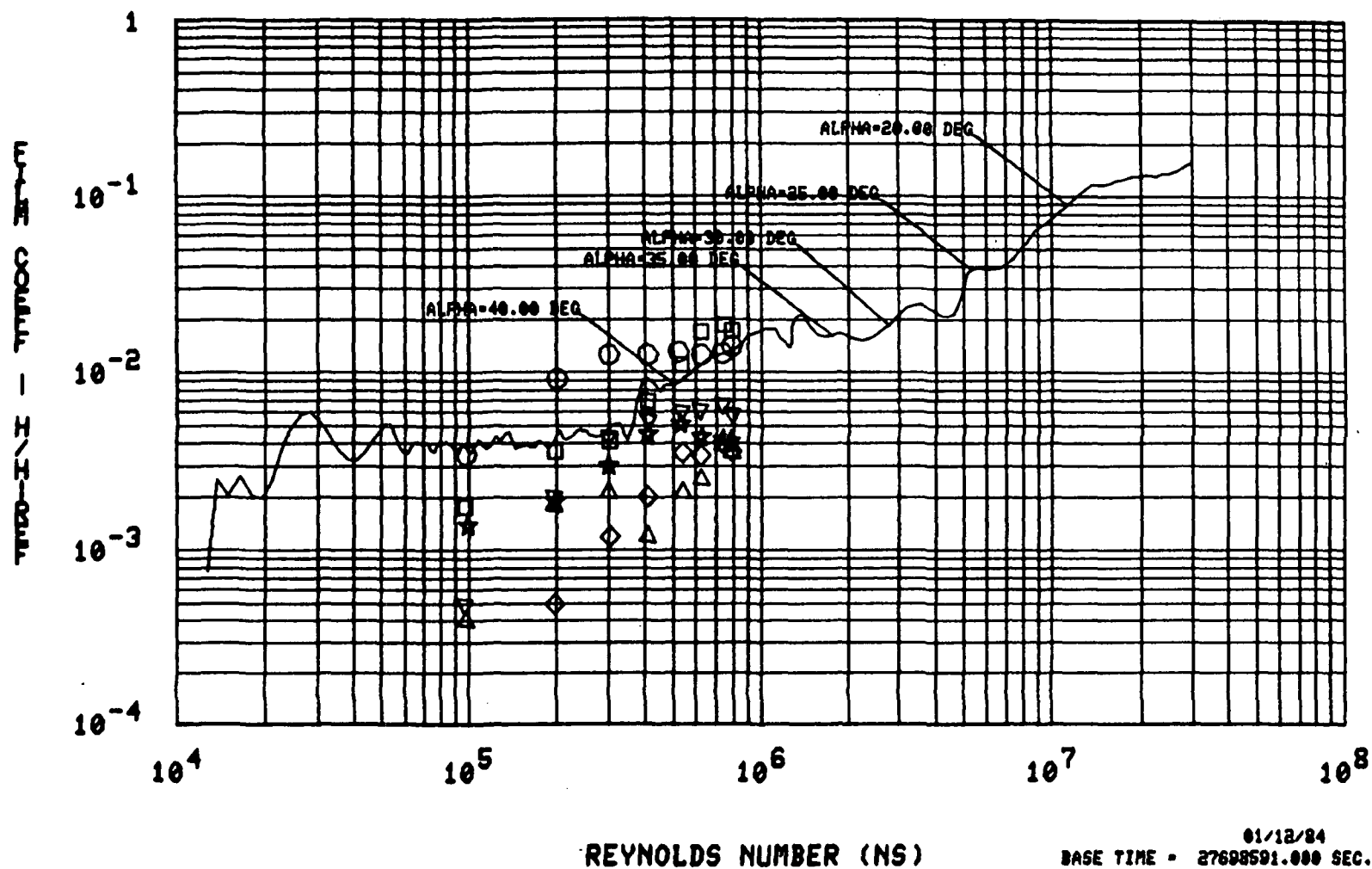


# STS-5 (107 FT LENGTH SIDE FUS X/L=0.98) Z=400

○  
□  
△  
▽  
★

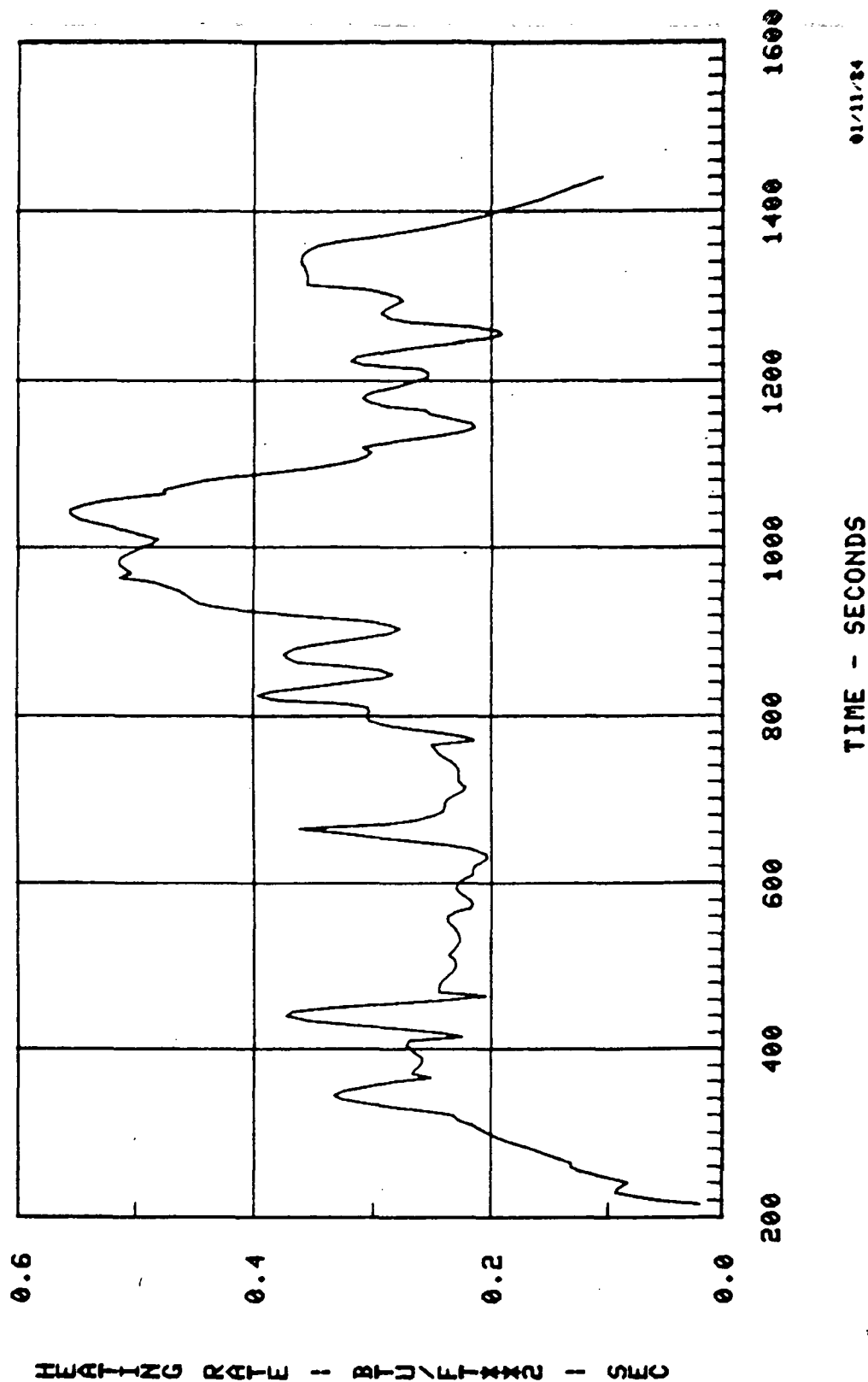
OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T0247A/H-REF 150-1430 SEC



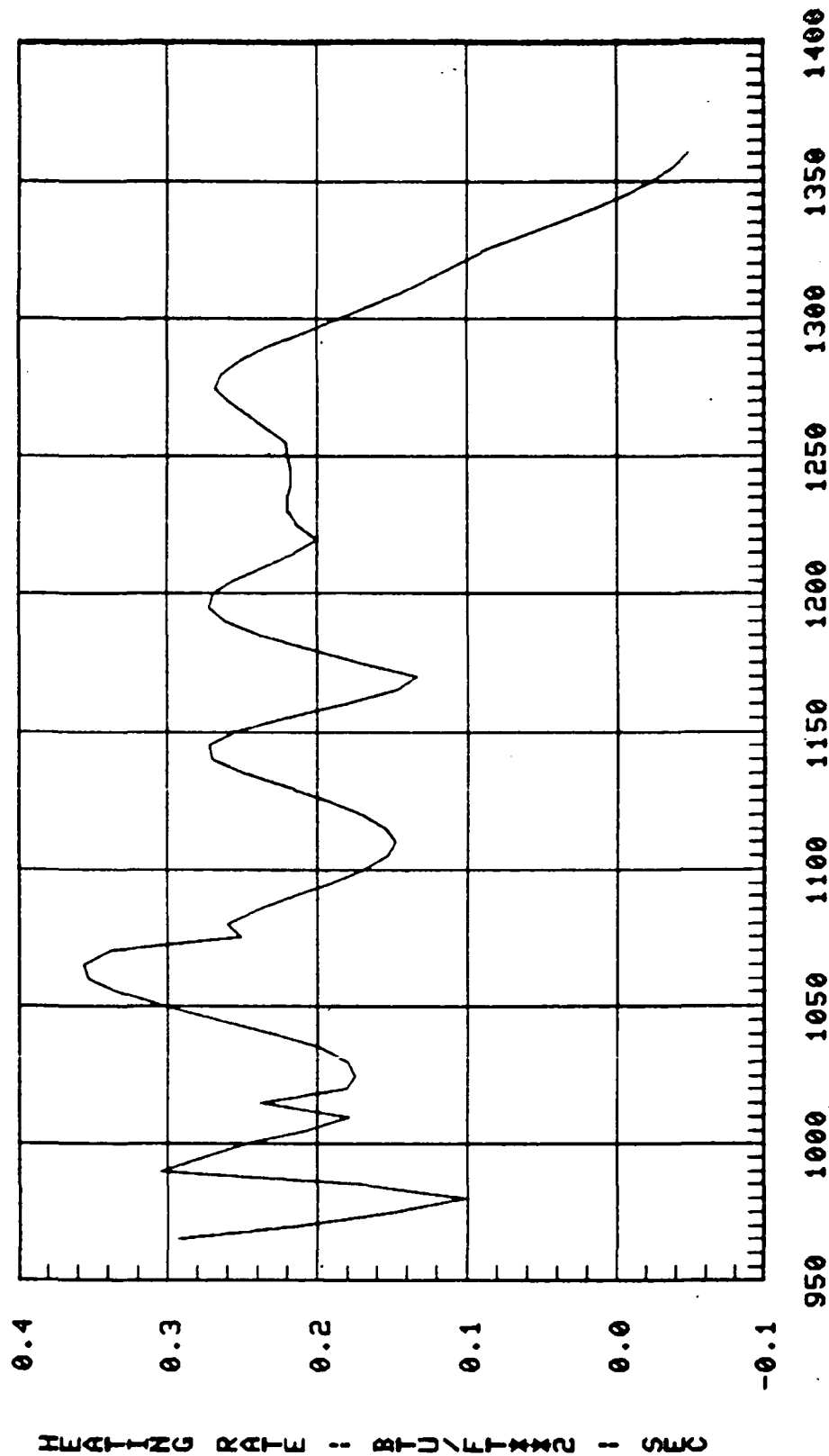
STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.98$ )  $Z=400$

U07T9247A



STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.98$ )  $Z=400$

U07T9247A

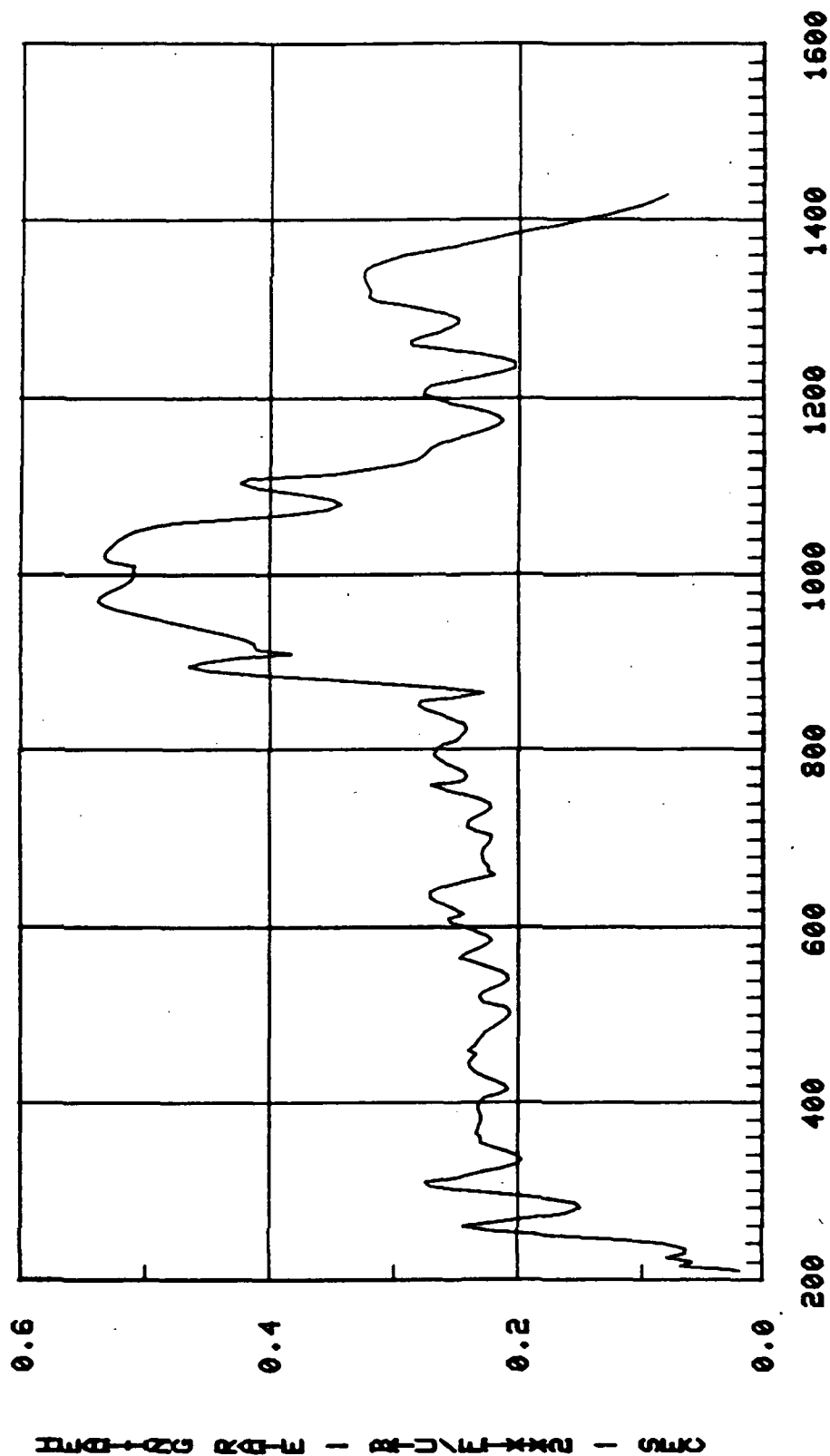


TIME - SECONDS

01/12/84

STS-5 (107 FT LENGTH SIDE FUS X/L=0.98) Z=400

U07T9247A

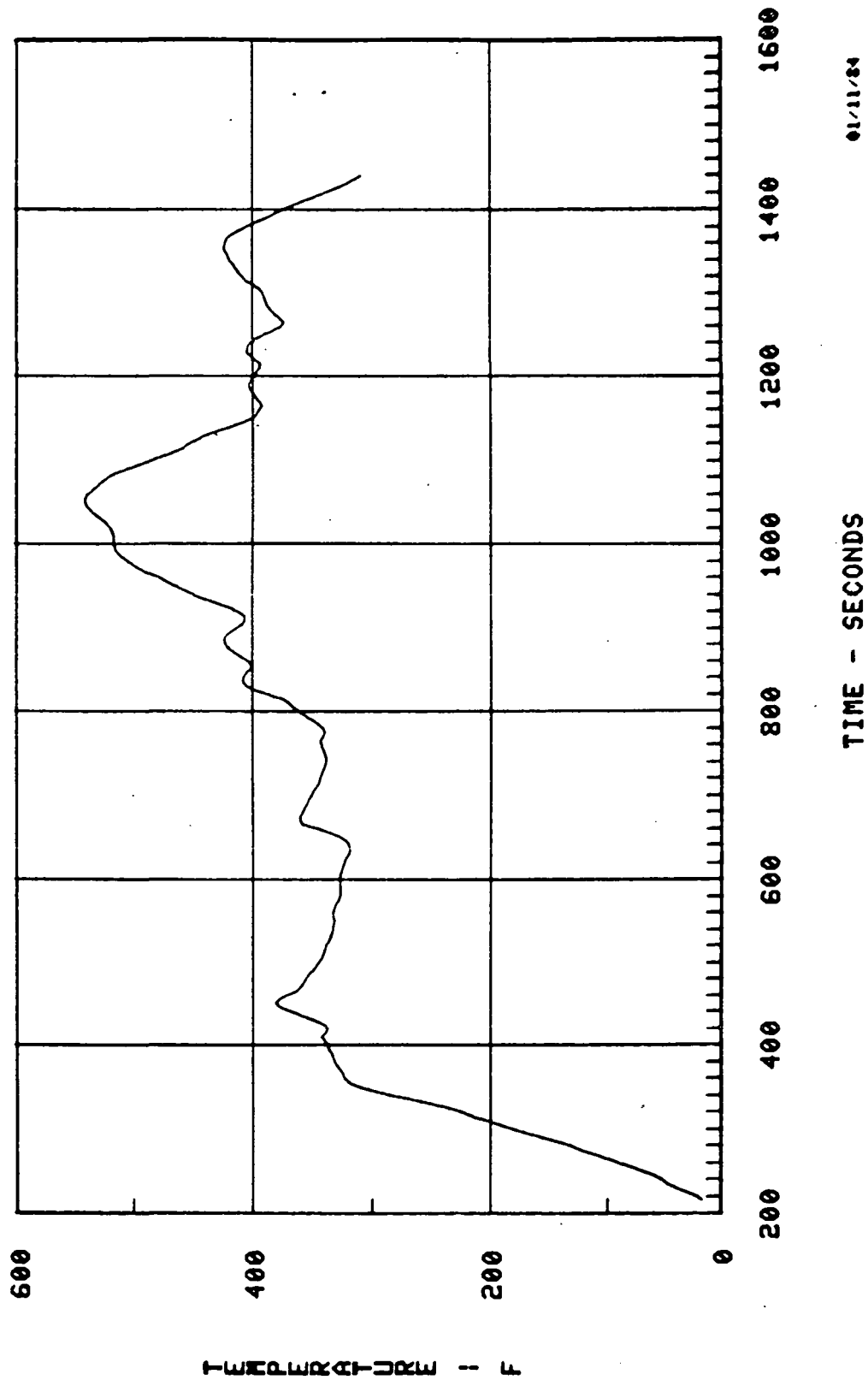


TIME - SECONDS

01/18/84

STS-3 (107 FT LENGTH SIDE FUS  $X/L=0.98$ ) Z=400

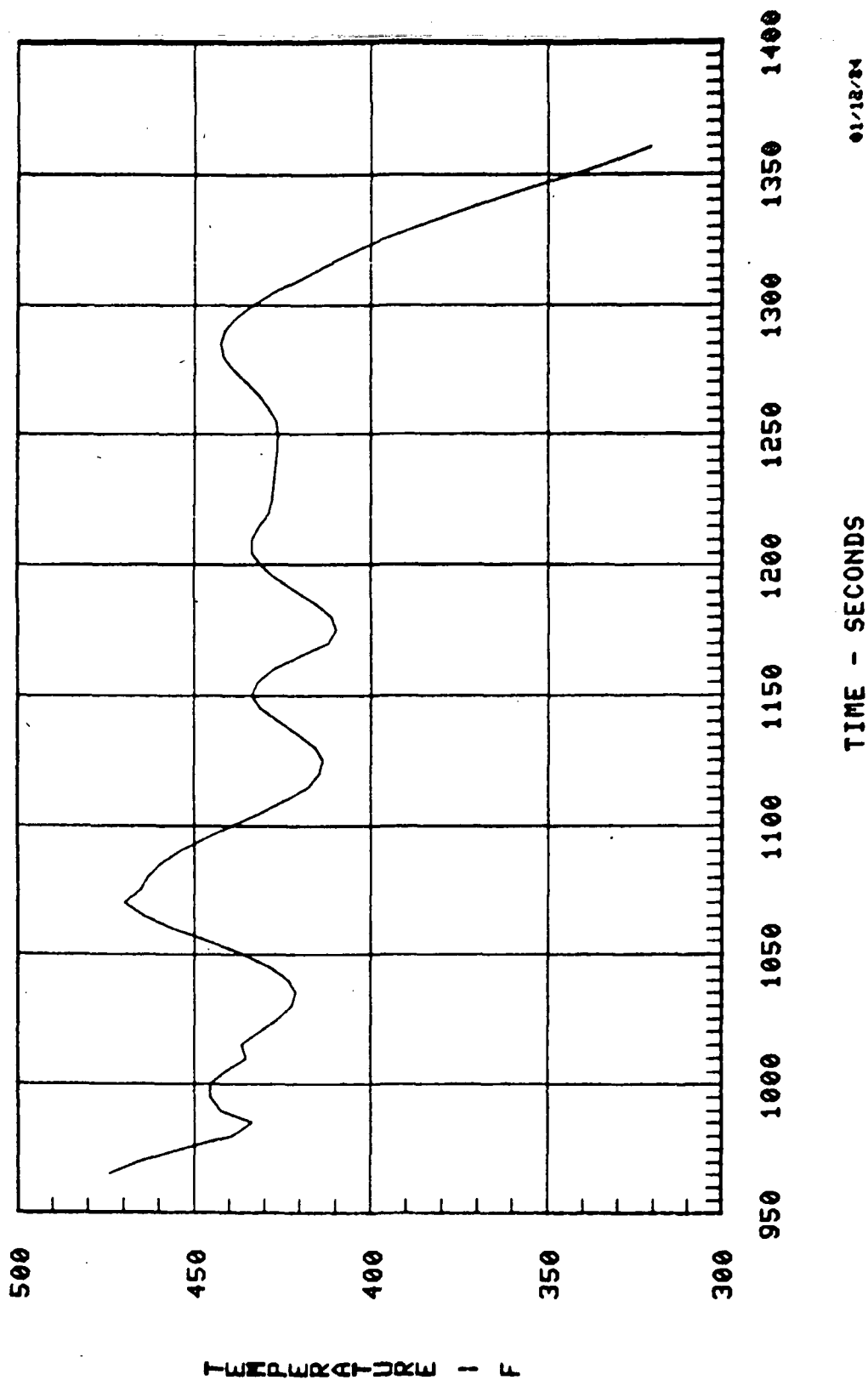
U07T9247A



01/11/84

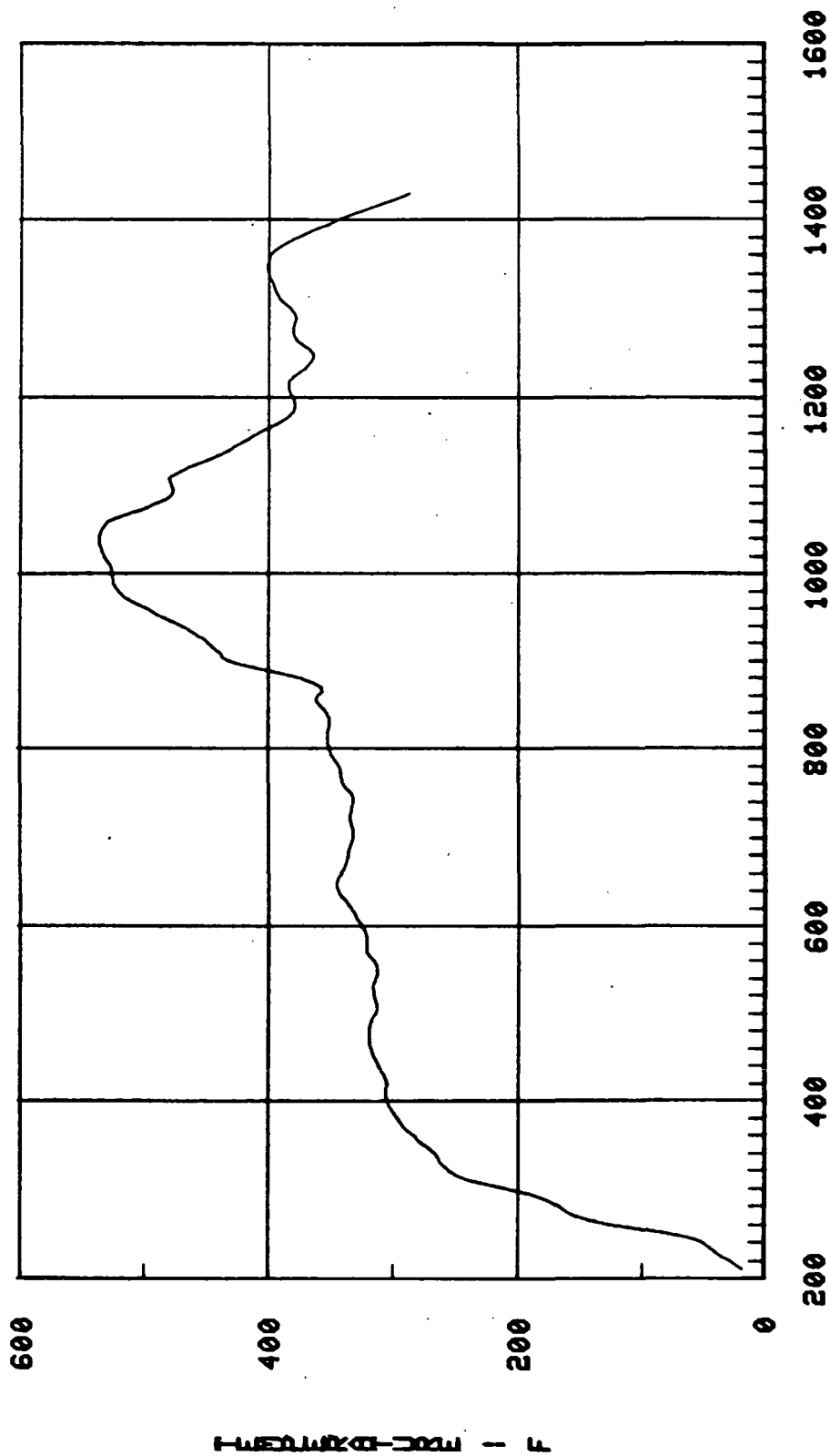
STS-4 (107 FT LENGTH SIDE FUS  $X/L=0.98$ )  $Z=400$

U07T9247A



STS-5 (107 FT LENGTH SIDE FUS X/L=0.98) Z=400

U07T9247A



TIME - SECONDS

01/12/84



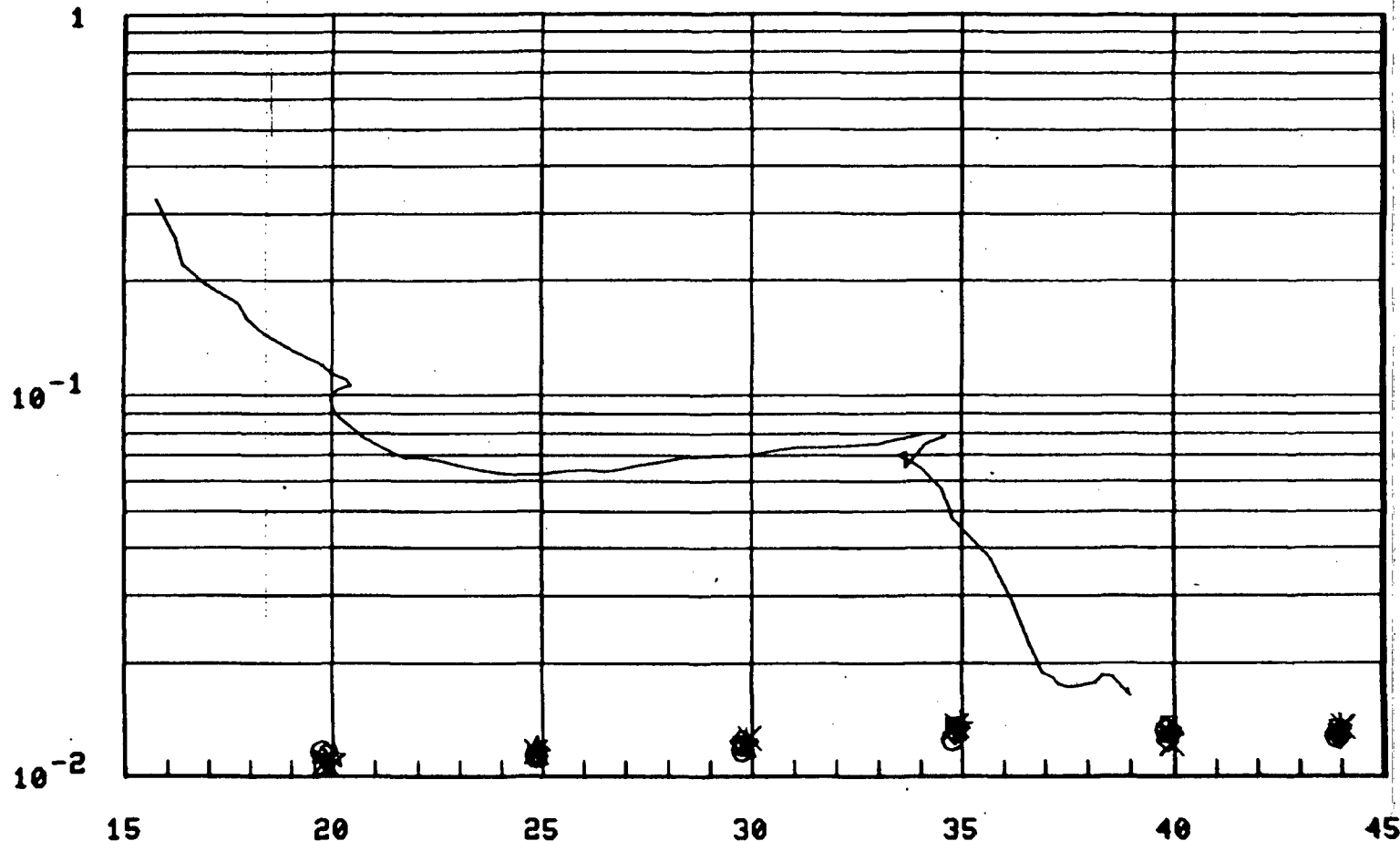
# STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9910A/H-REF 1065-1500 SEC

FILE COUNL - I/I-COUNL



ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 09049744.000 SEC.

```
OH74 0.0175 SCALE RE = 0.5 E06
OH74 0.0175 SCALE RE = 1.0 E06
OH74 0.0175 SCALE RE = 1.5 E06
OH74 0.0175 SCALE RE = 2.0 E06
OH74 0.0175 SCALE RE = 2.5 E06
OH74 0.0175 SCALE RE = 3.0 E06
OH74 0.0175 SCALE RE = 3.5 E06
OH74 0.0175 SCALE RE = 3.7 E06
```

○□△▽✱✚✘

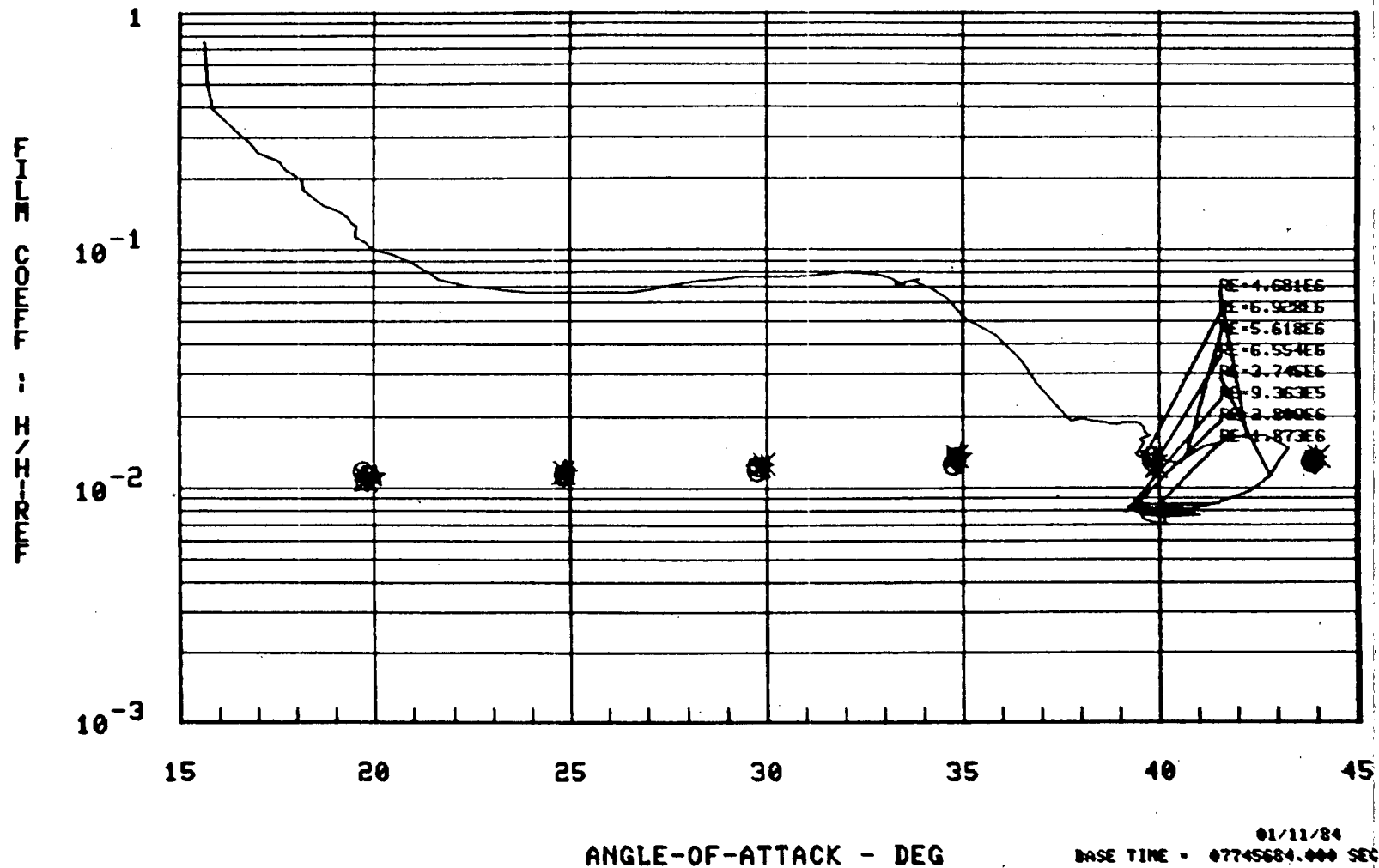


# STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U0779910A/H-REF 200-1440 SEC

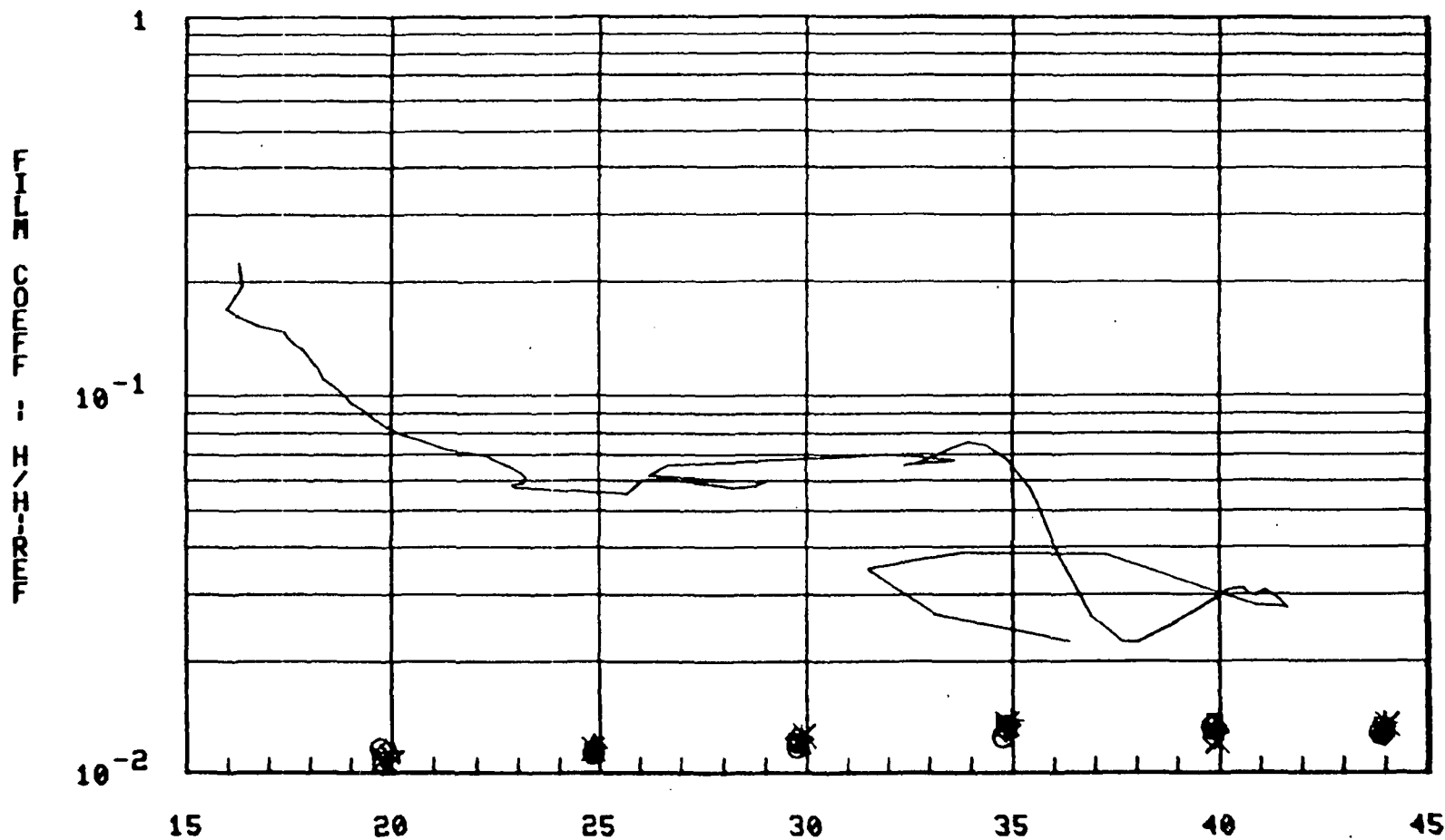


# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.31$ ) $Z=440$

O  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9910A/H-REF 965-1360 SEC



ANGLE-OF-ATTACK - DEG

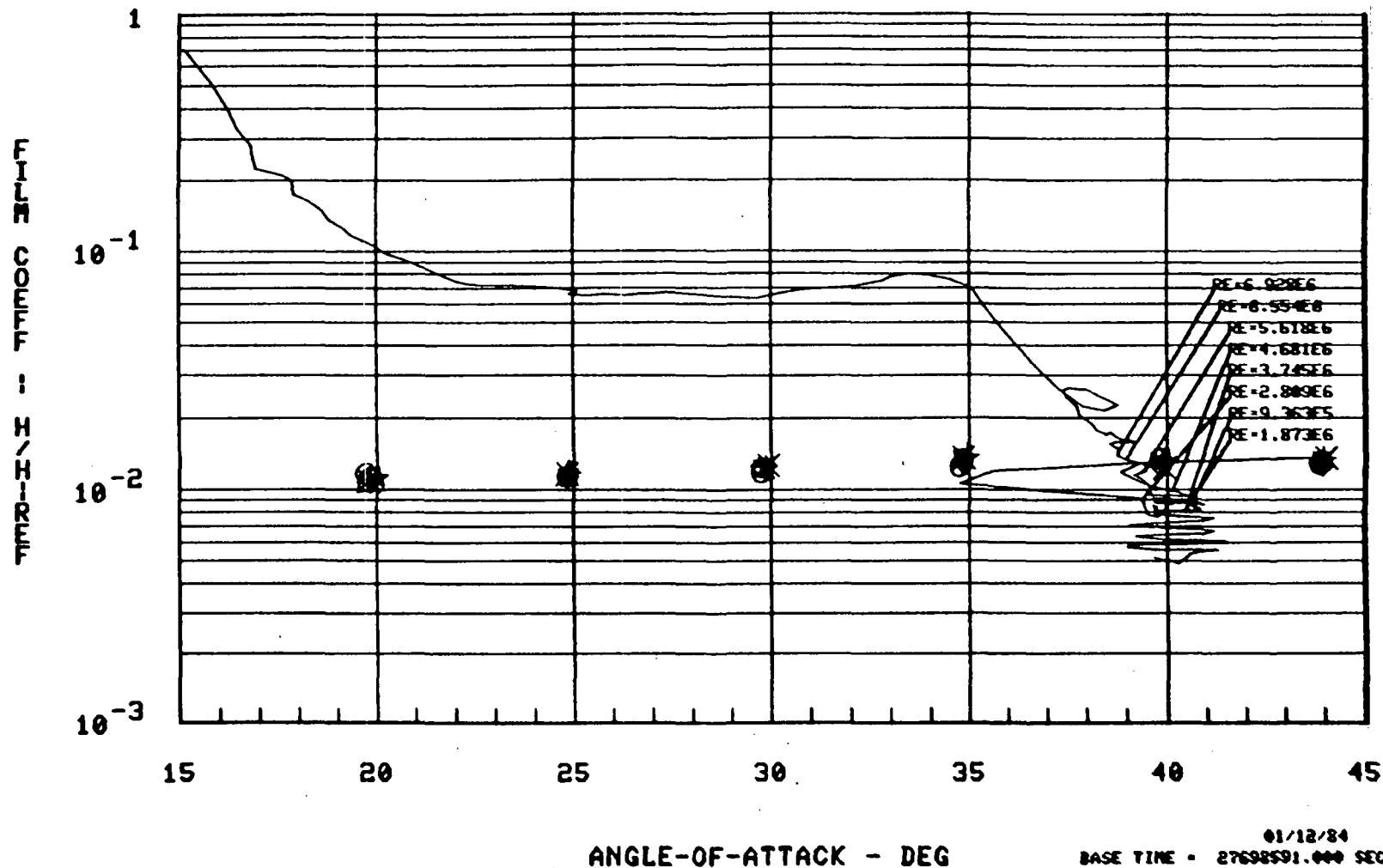
01/12/84  
BASE TIME = 16000423.000 SEC.

# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

○  
◇  
△  
▽  
+  
\*  
X

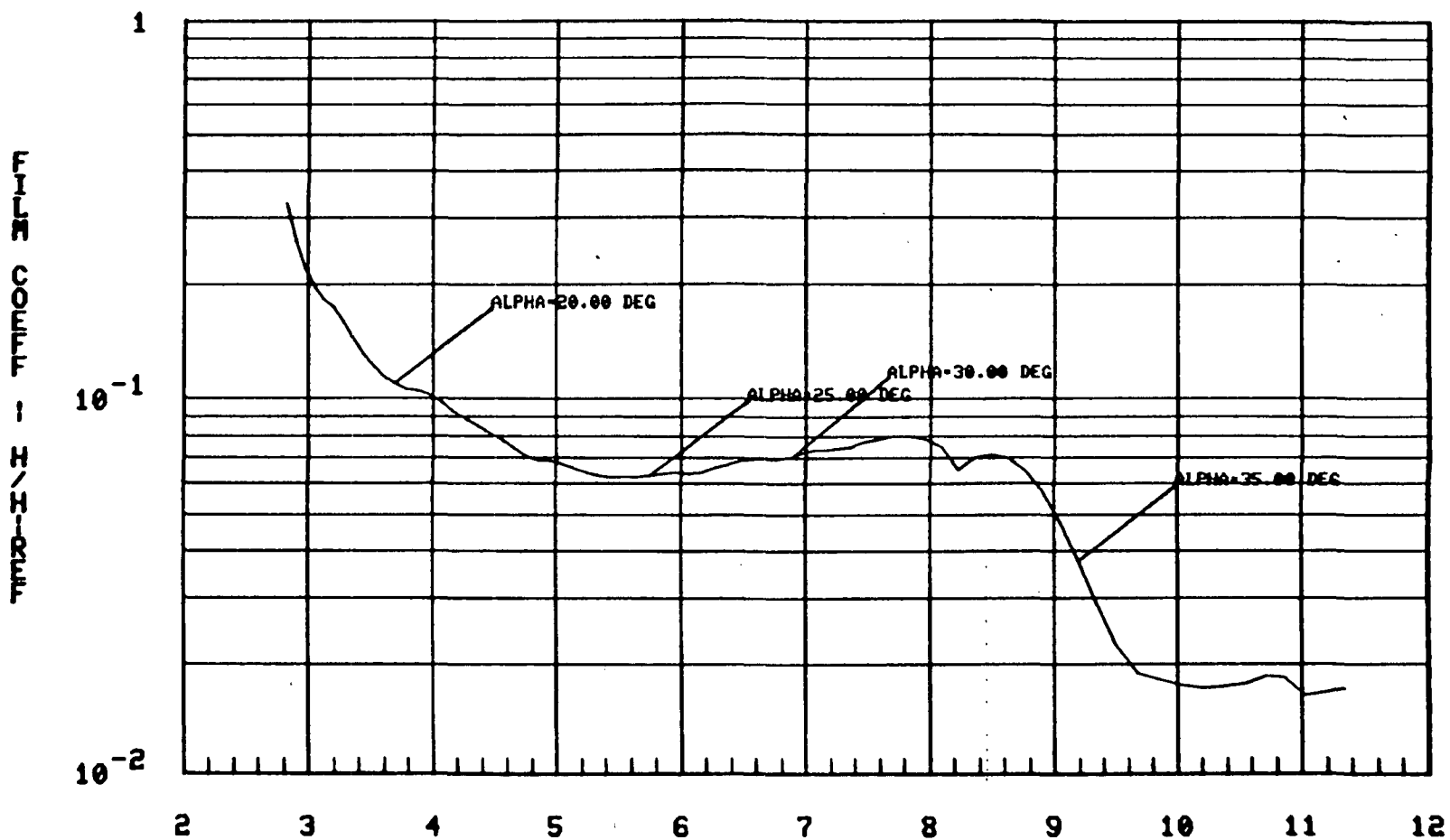
OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9910A/H-REF 150-1430 SEC



# STS-1 (107 FT LENGTH SIDE PLB DOOR $X/L=0.31$ ) $Z=440$

U07T9910A/H-REF 1065-1500 SEC



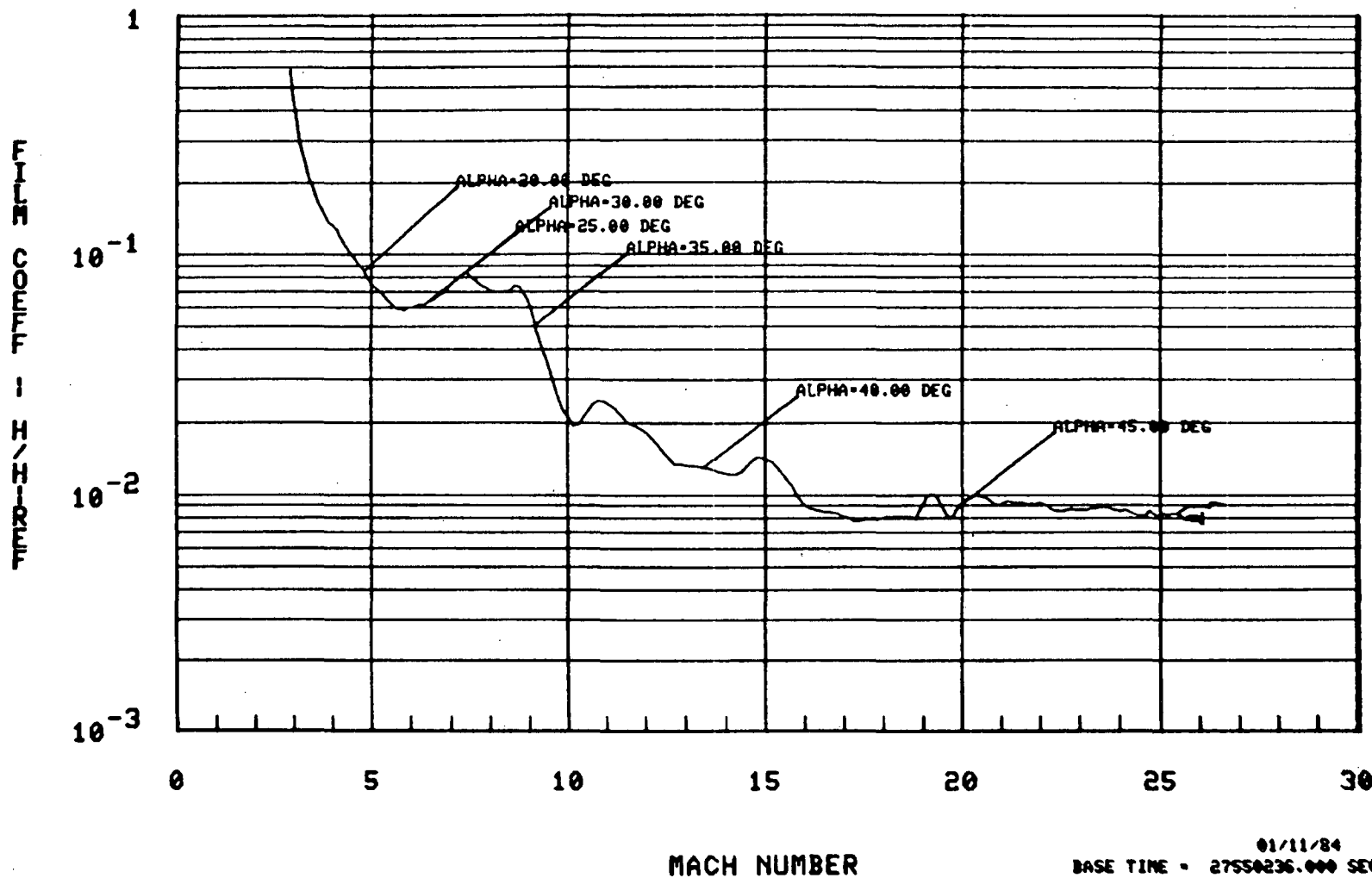
B-381

MACH NUMBER

01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE PLB DOOR $X/L=0.31$ ) $Z=440$

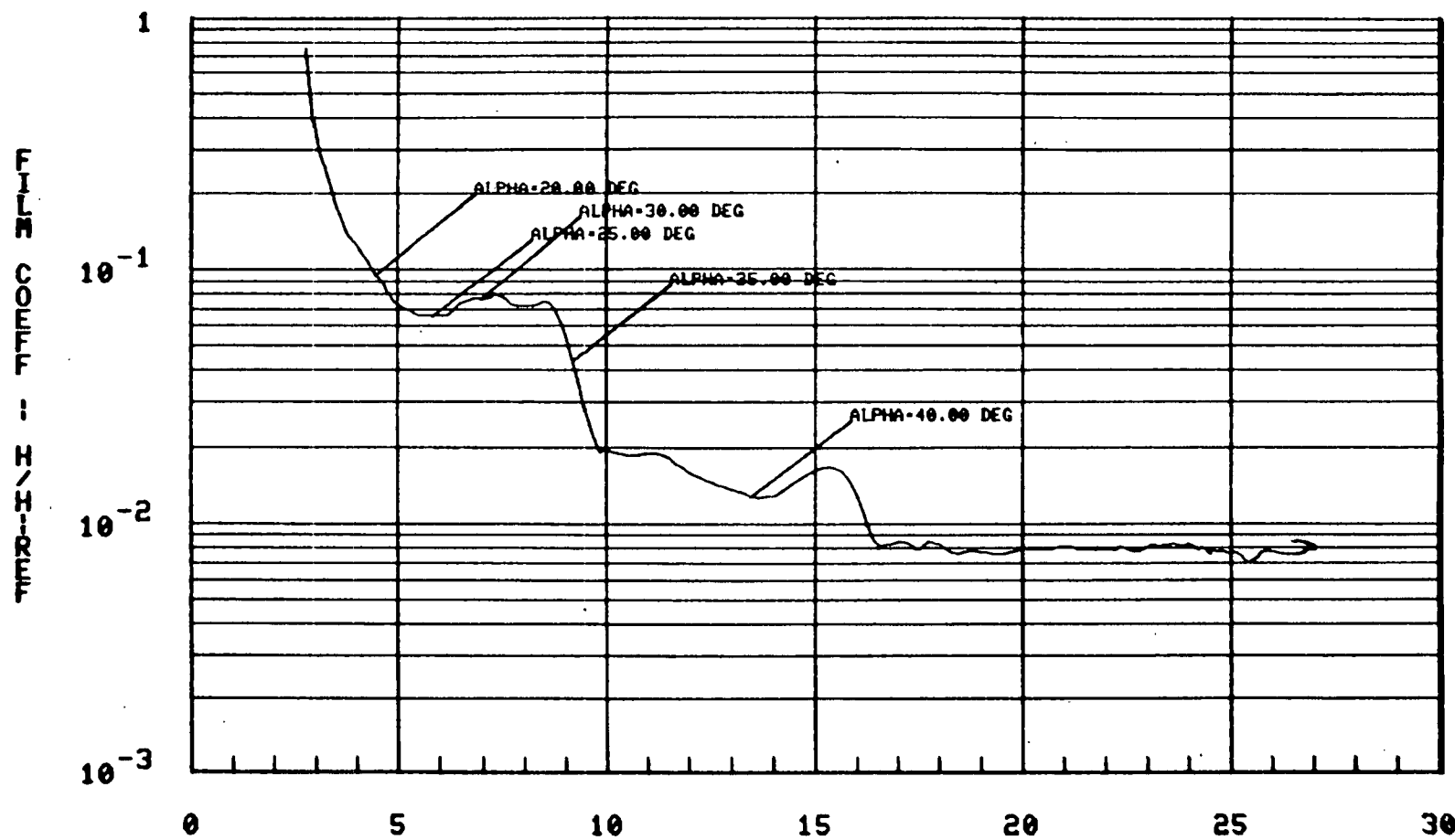
U07T9910A/H-REF 200-1530 SEC



B-382

STS-3 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.31$ )  $Z=440$

U87T9910A/H-REF 200-1440 SEC



B-383

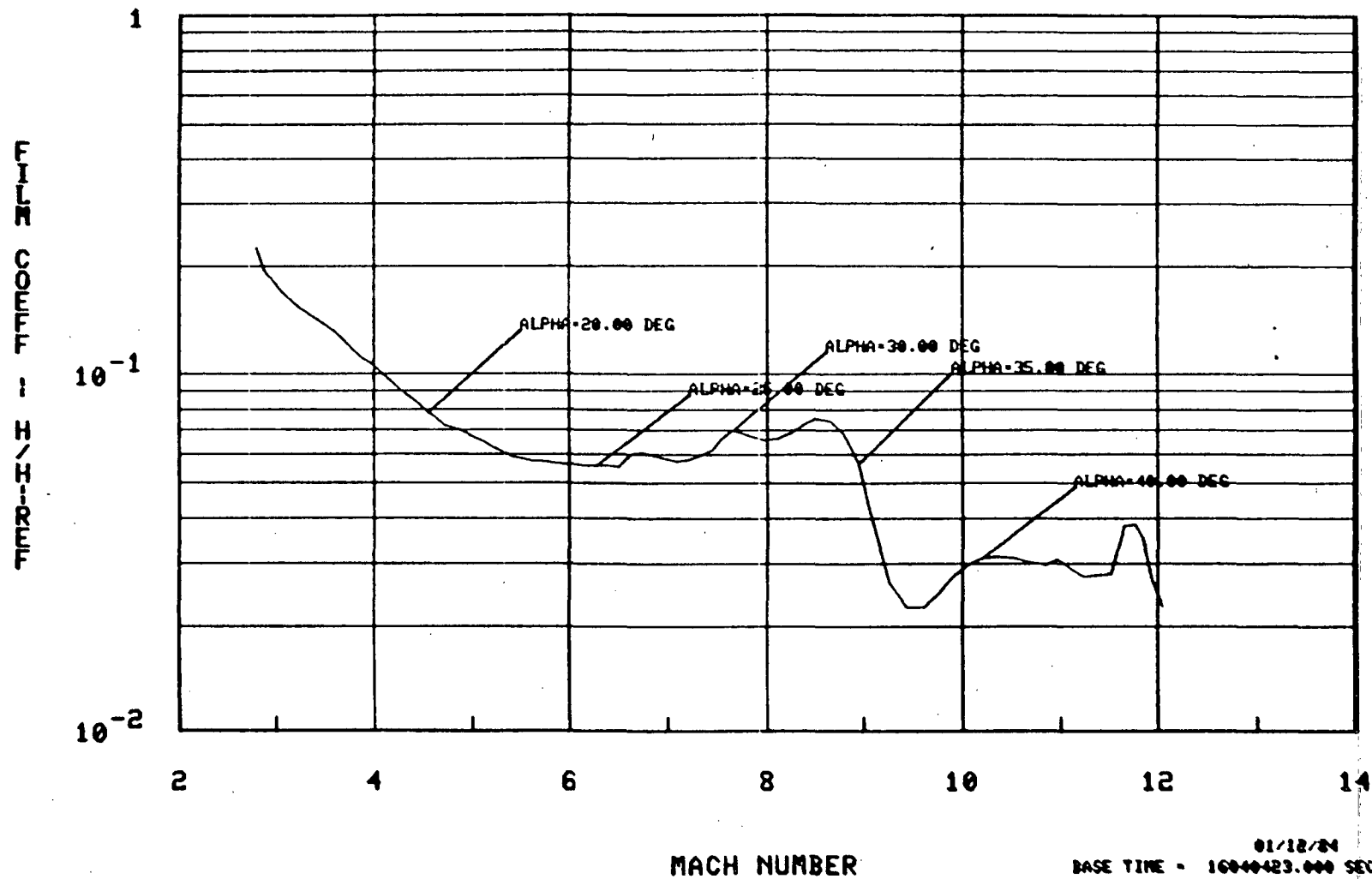
MACH NUMBER

01/11/84  
BASE TIME = 07745684.000 SEC.



# STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

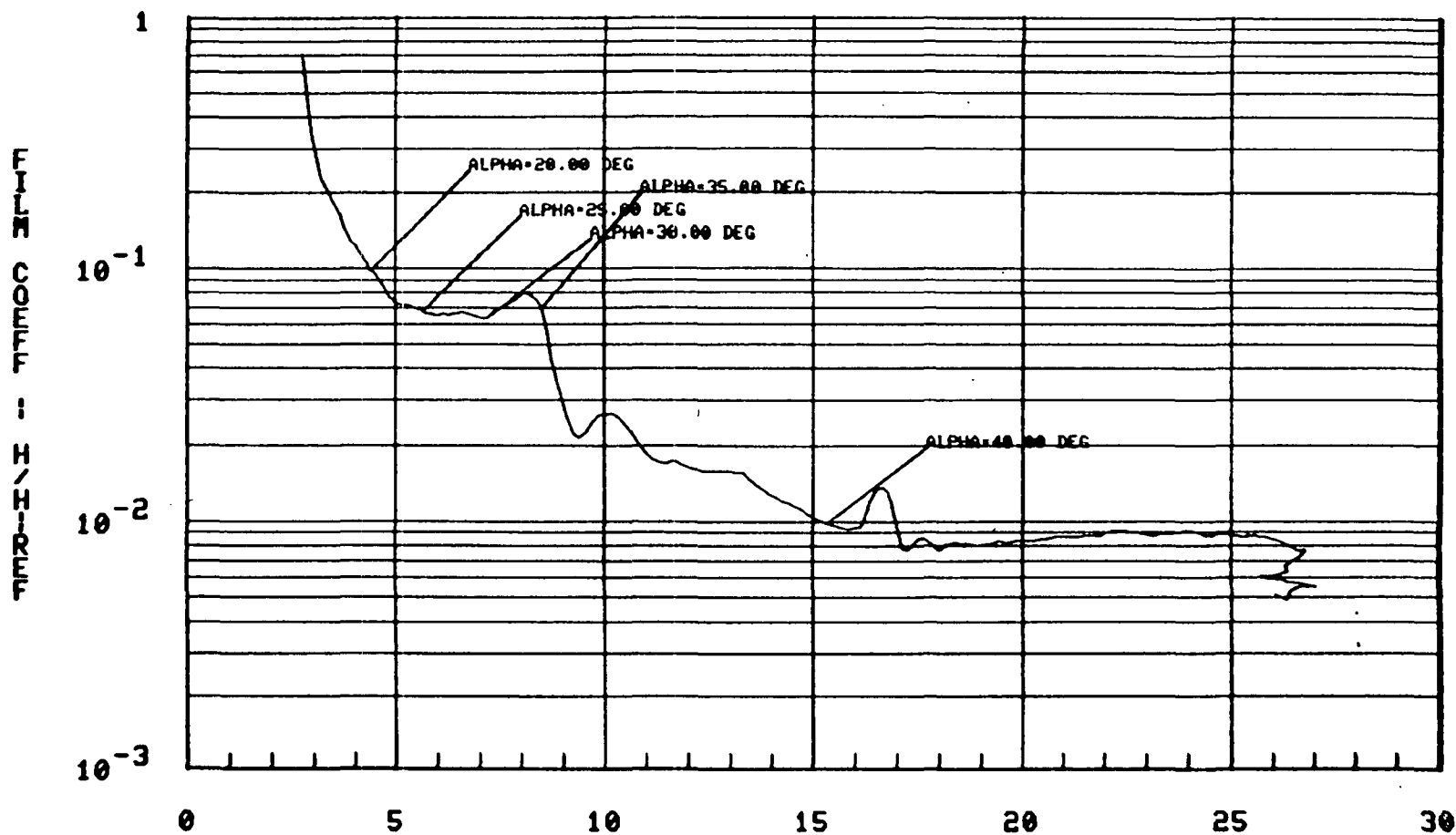
U07T9910A/H-REF 965-1360 SEC



B-384

STS-5 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.31$ )  $Z=440$

U07T9910A/H-REF 150-1430 SEC



B-385

MACH NUMBER

01/12/84  
BASE TIME - 27698591.000 SEC.

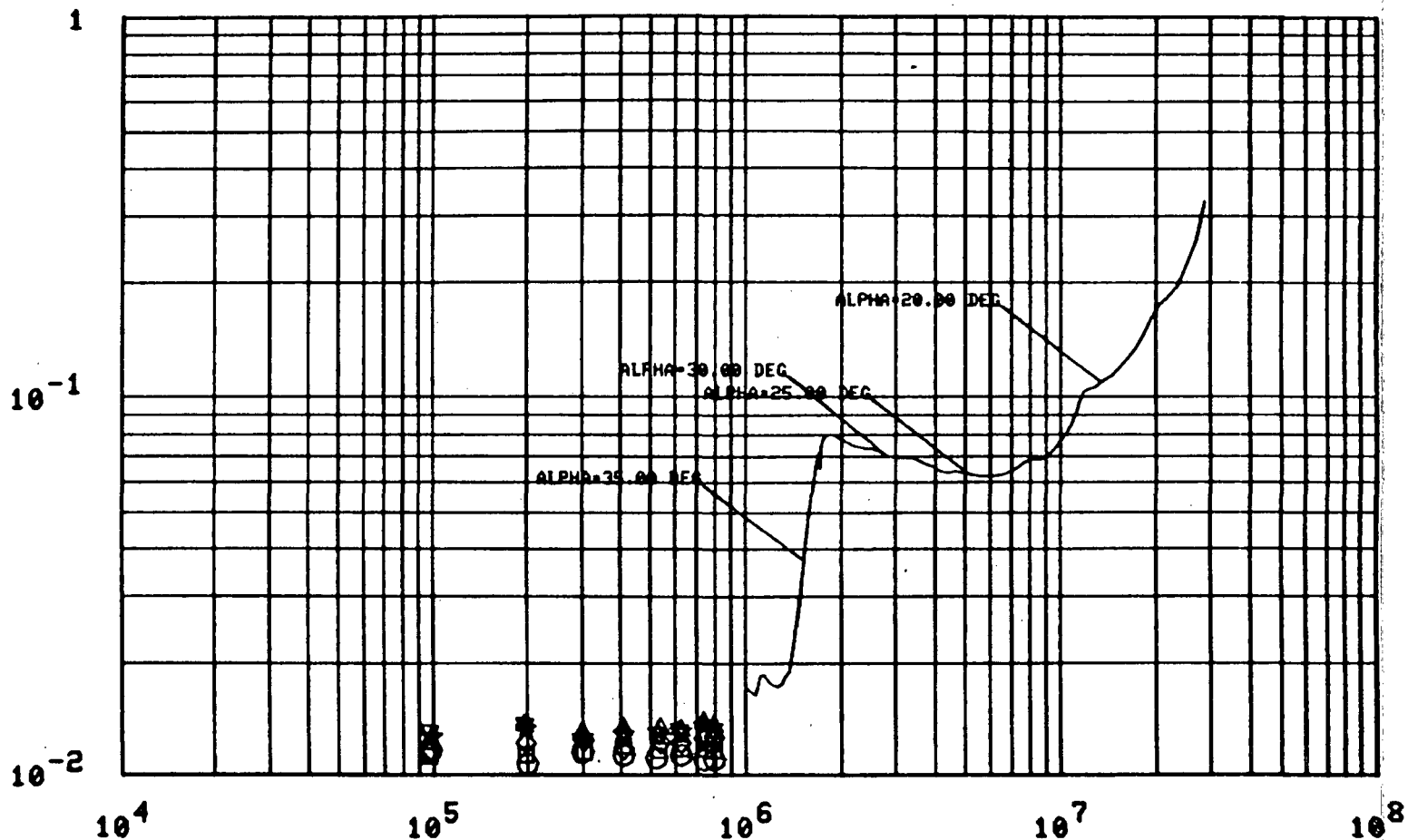
# STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9910A/H-REF 1065-1500 SEC

TIME SCALE - H-I-SCALE



REYNOLDS NUMBER (NS)

01/11/84  
BASE TIME = 09049744.000 SEC.

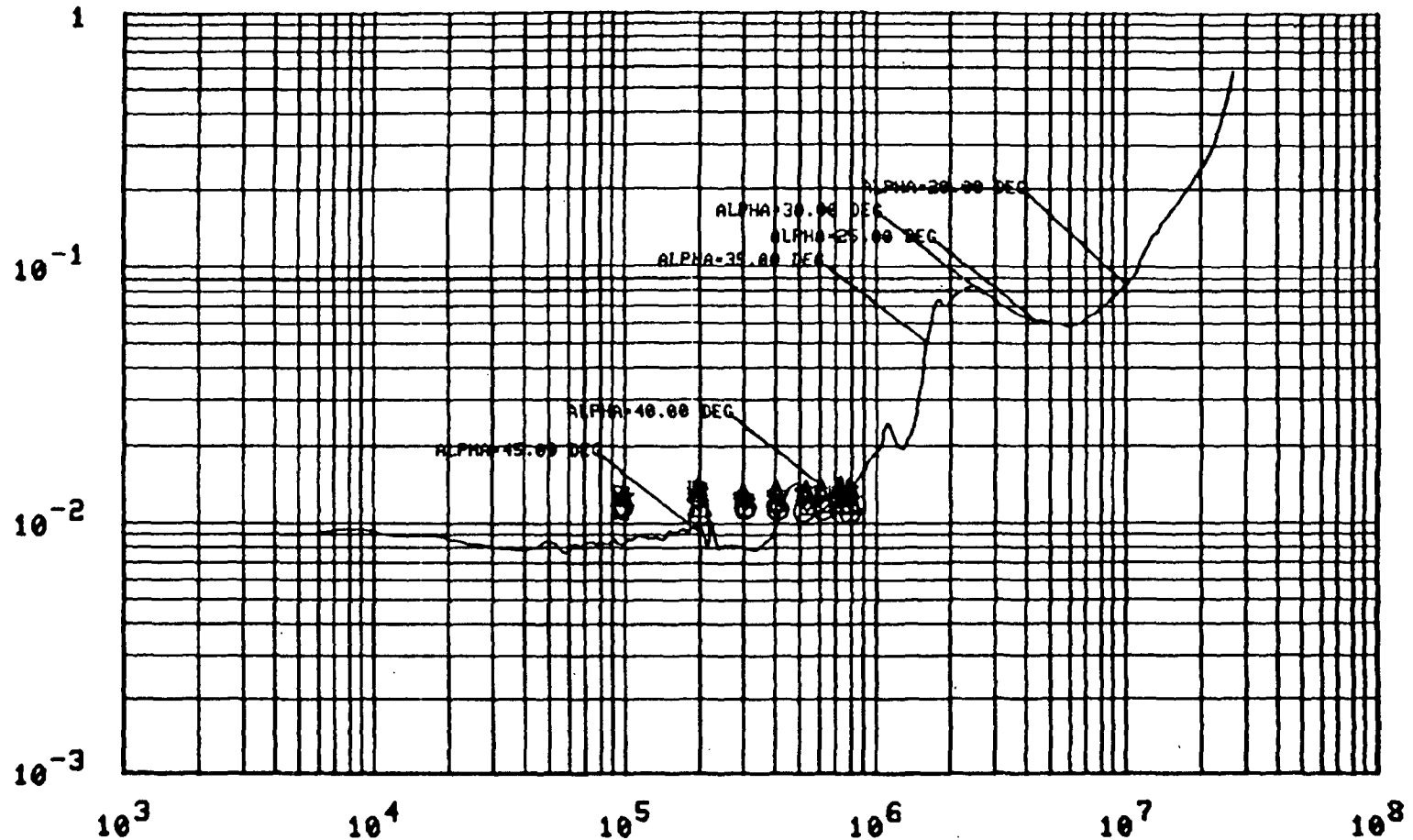
# STS-2 (107 FT LENGTH SIDE PLB DOOR $X/L=0.31$ ) $Z=440$

000000

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9910A/H-REF 200-1530 SEC

LINE COUNT - I/I-0000



REYNOLDS NUMBER (NS)

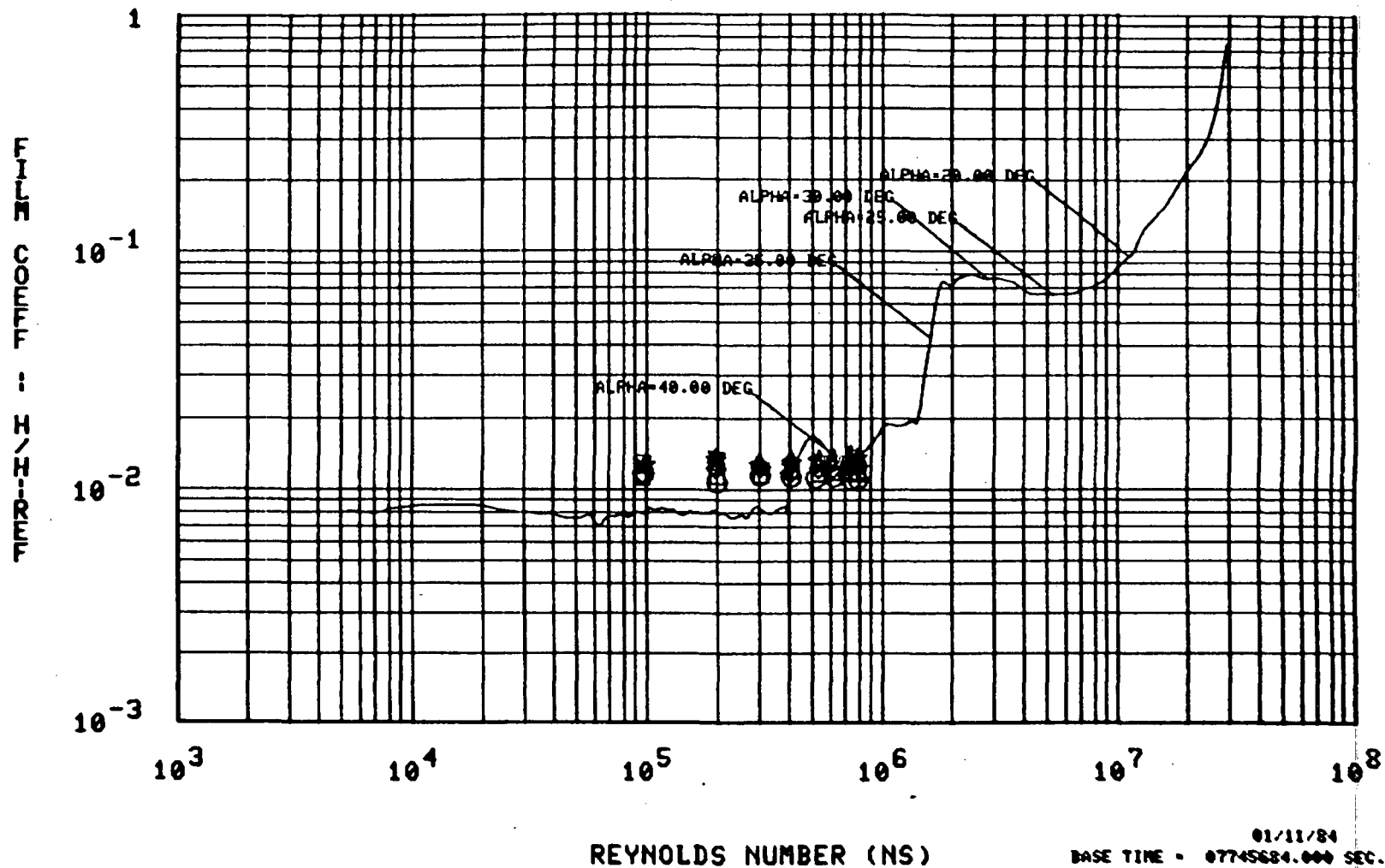
01/11/84  
BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE PLB DOOR $X/L=0.31$ ) $Z=440$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9910A/H-REF 200-1440 SEC

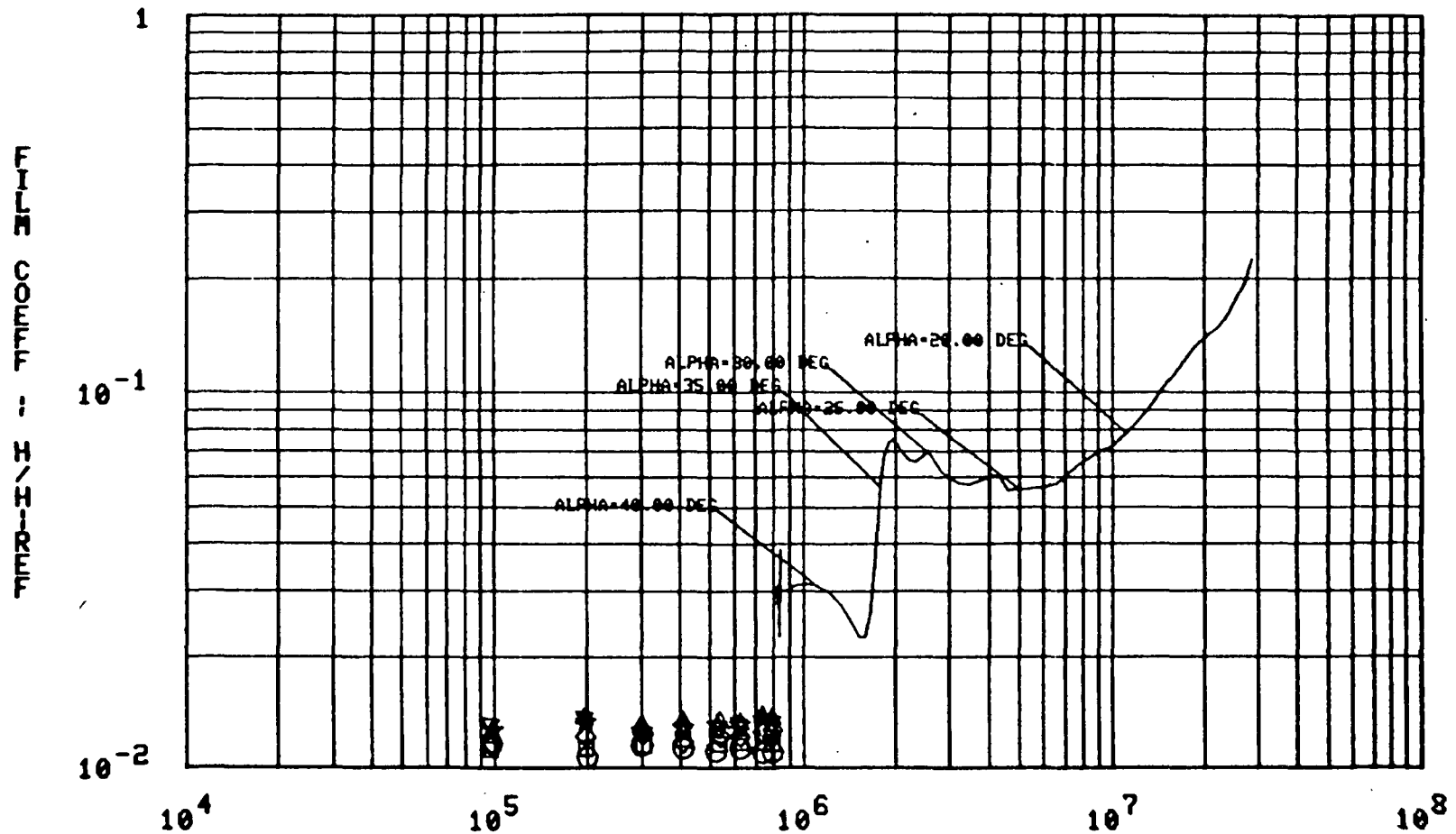


# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.31$ ) $Z=440$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9910A/H-REF 965-1360 SEC



REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 16040423.000 SEC.

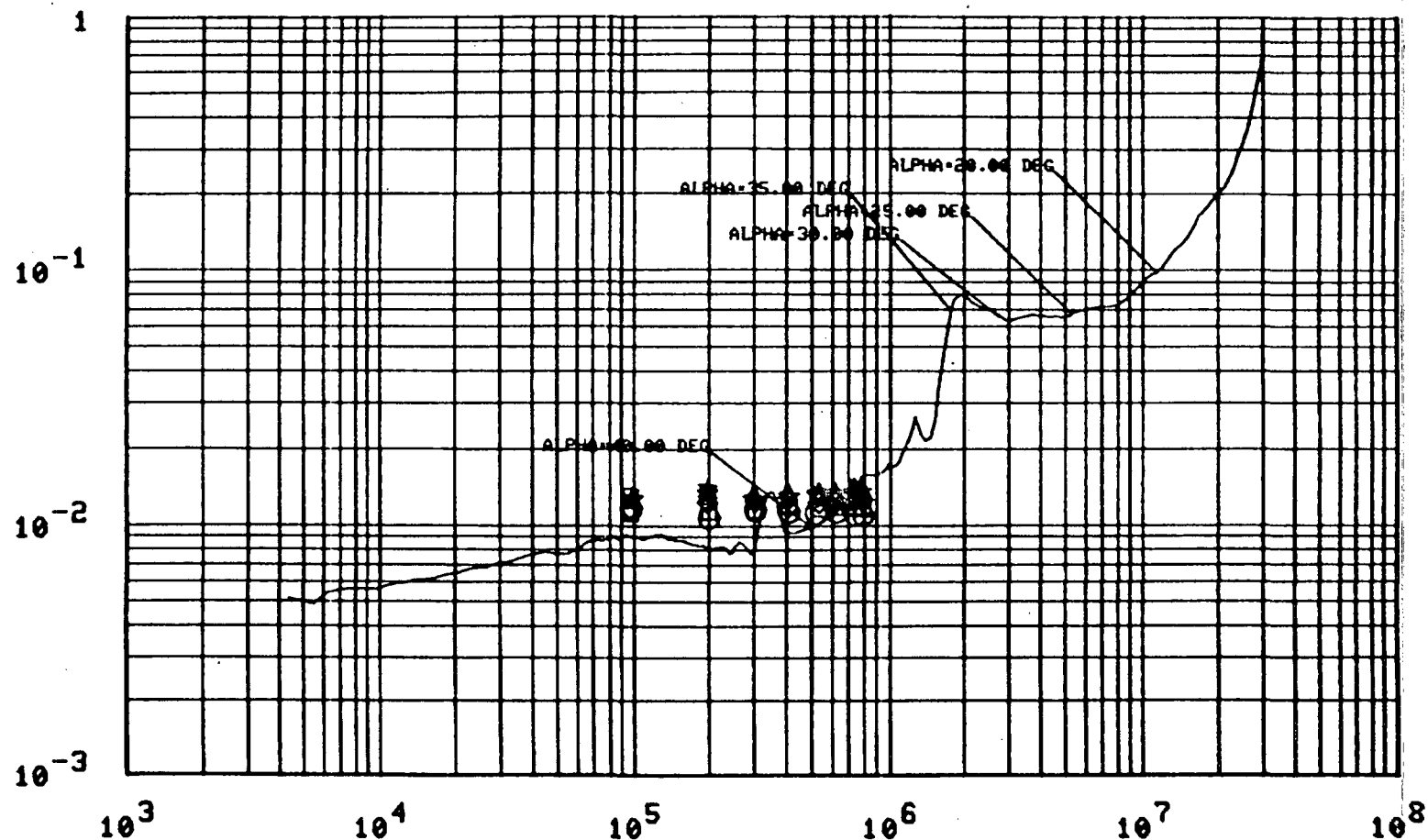
# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9910A/H-REF 150-1430 SEC

FILE COWLE - H/H-REF

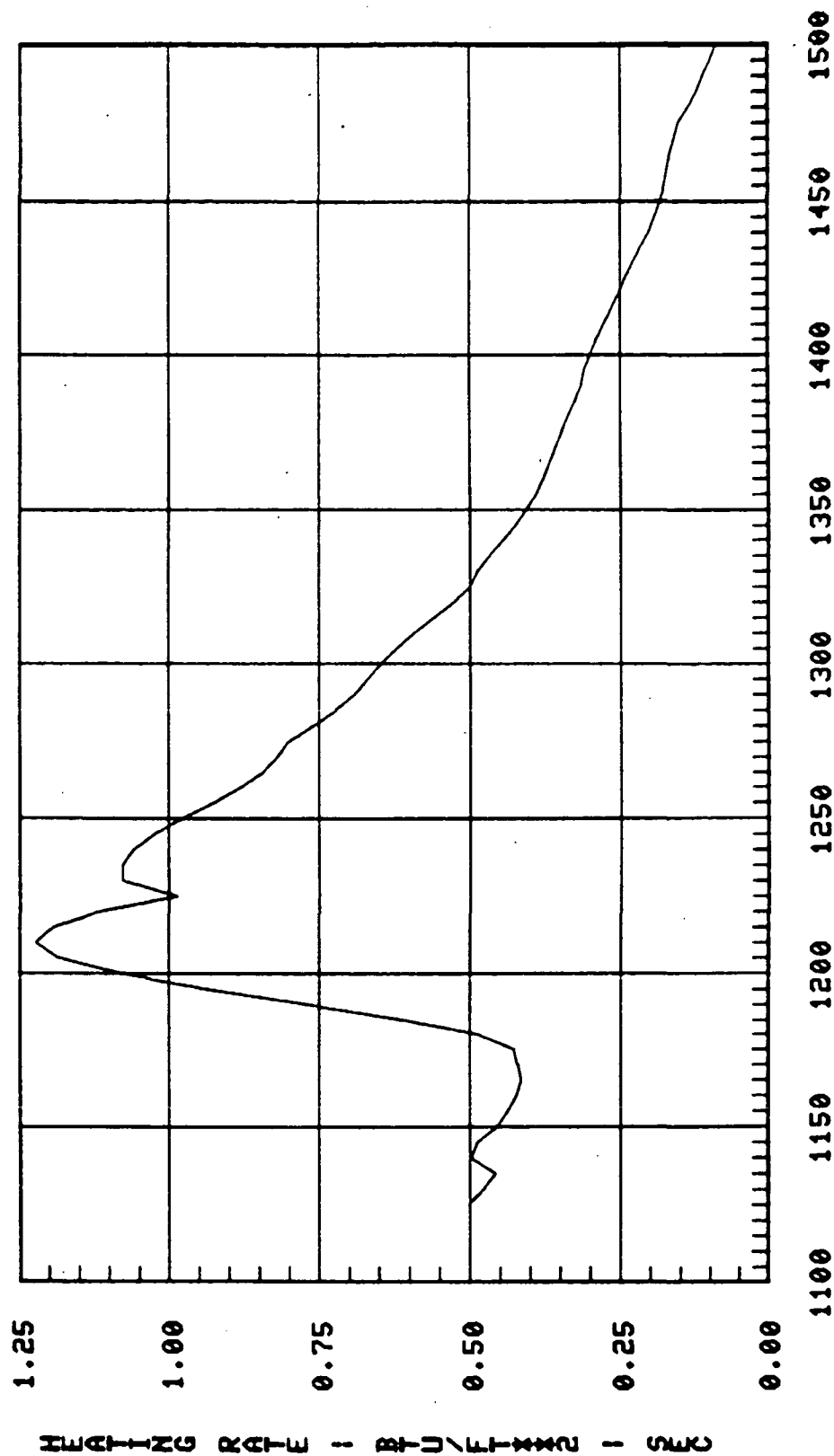


REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

U0779910A



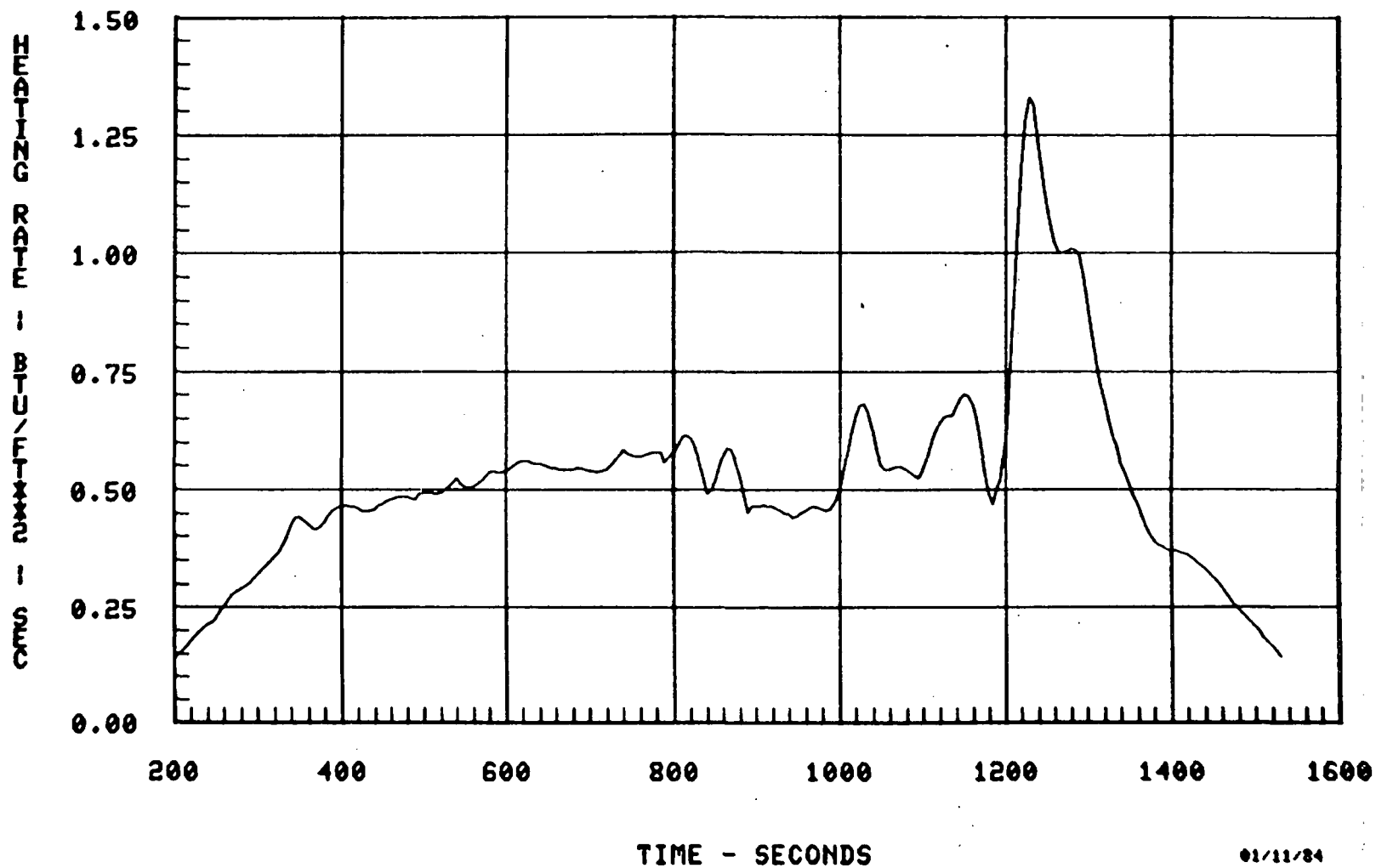
TIME - SECONDS

01/11/84



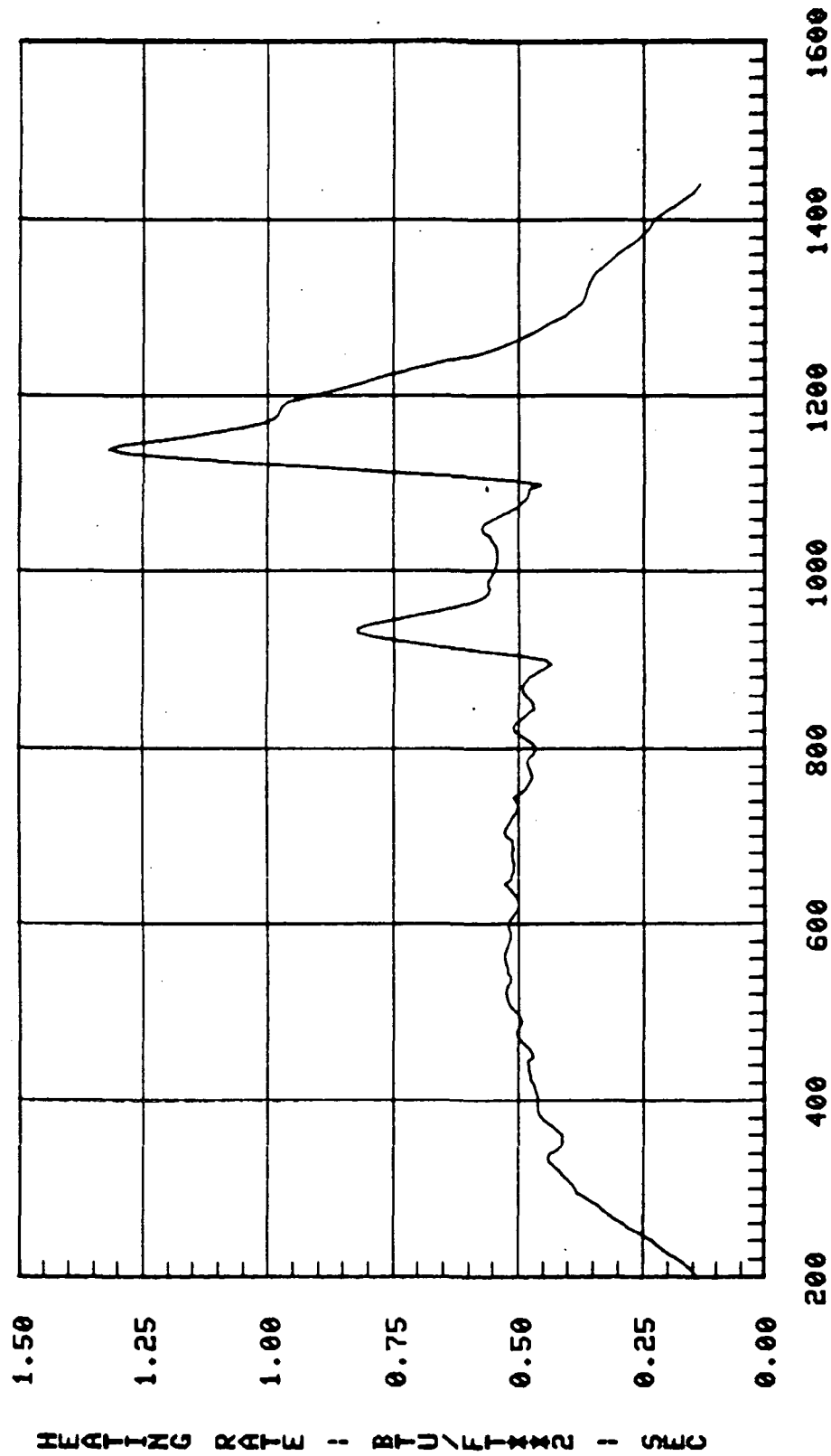
STS-2 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.31$ )  $Z=440$

U07T9910A



STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

U07T9910A

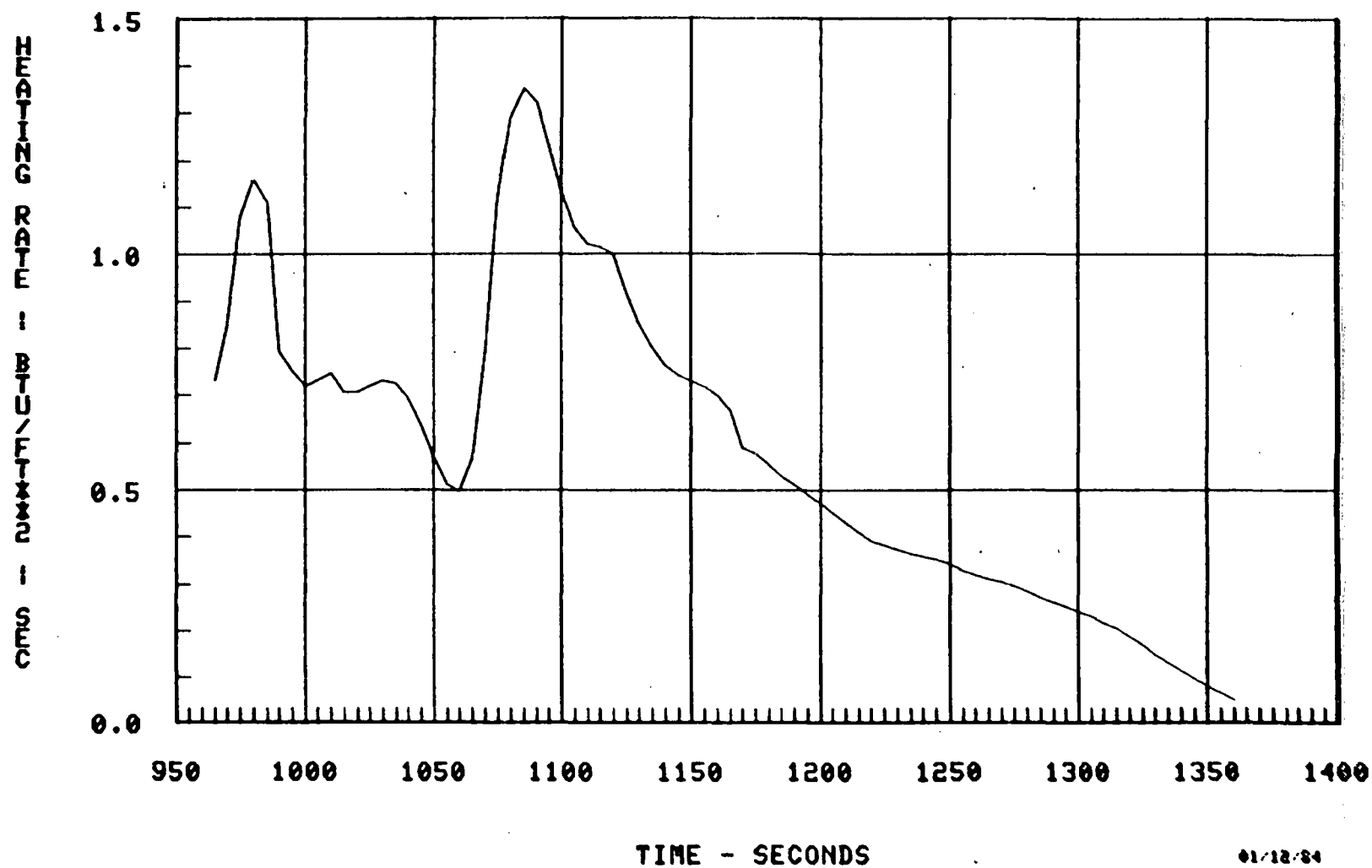


TIME - SECONDS

01/11/84

STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

U07T9910A

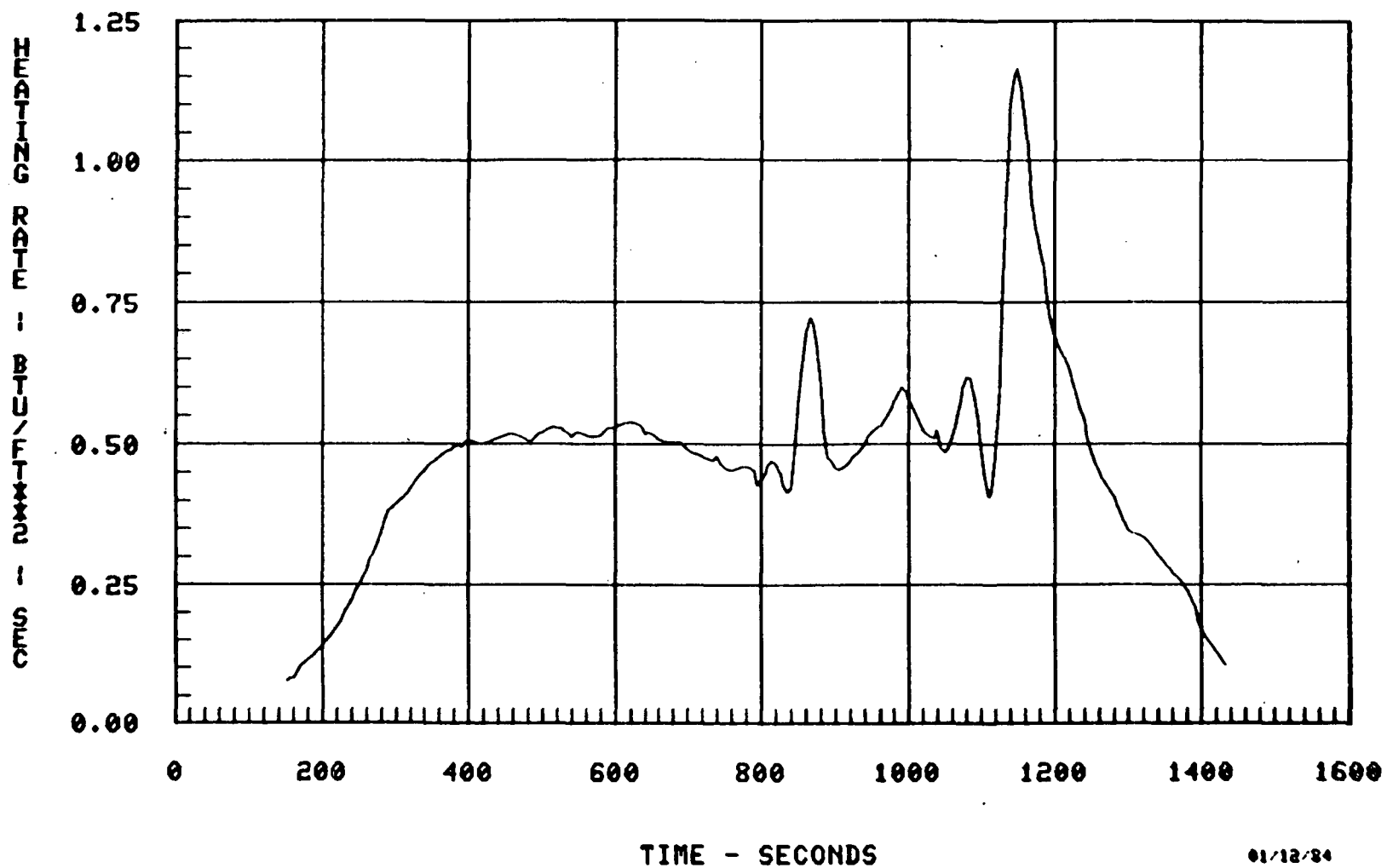


B-394

01/12/84

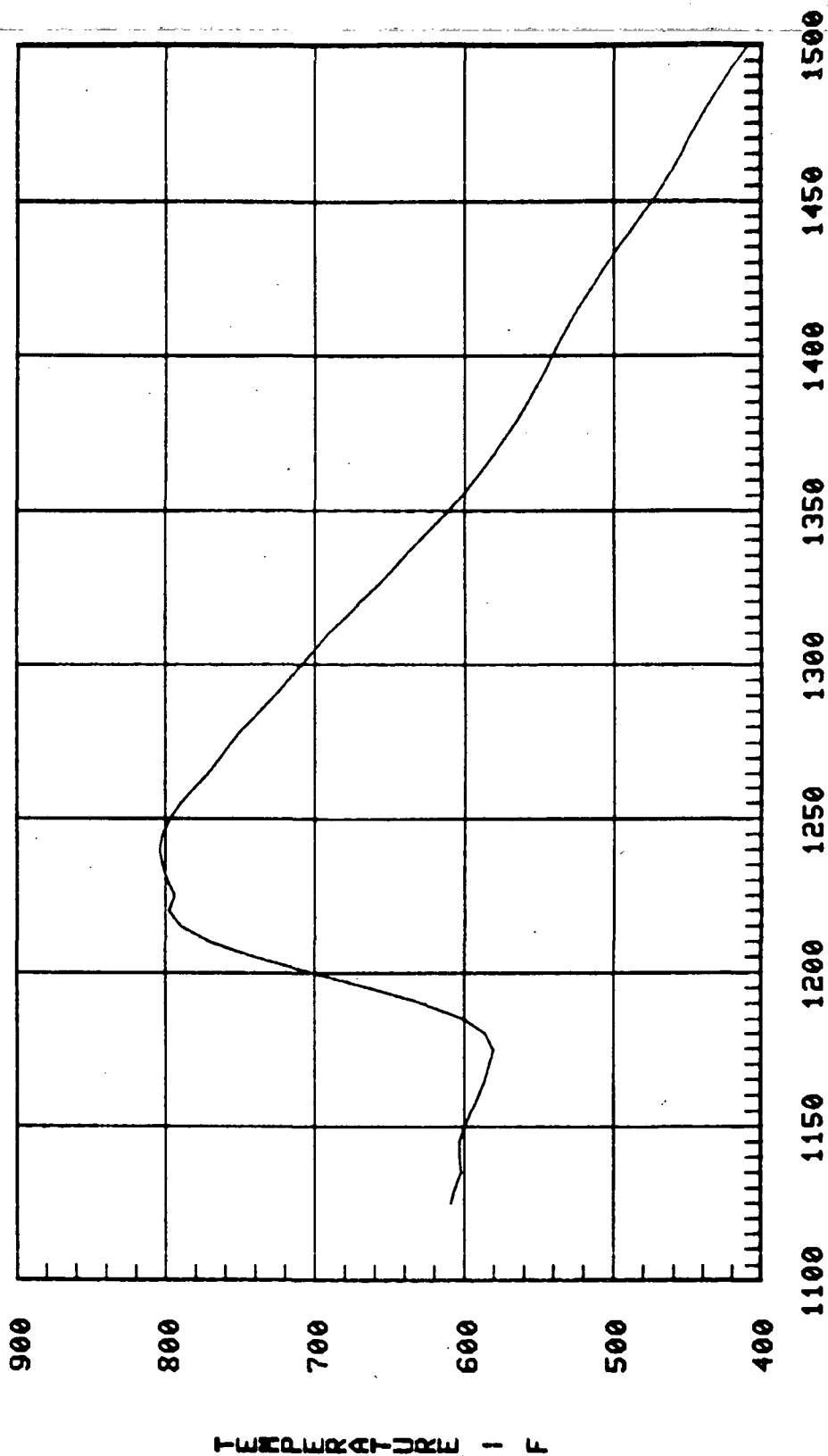
STS-5 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.31$ )  $Z=440$

U07T9910A



STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

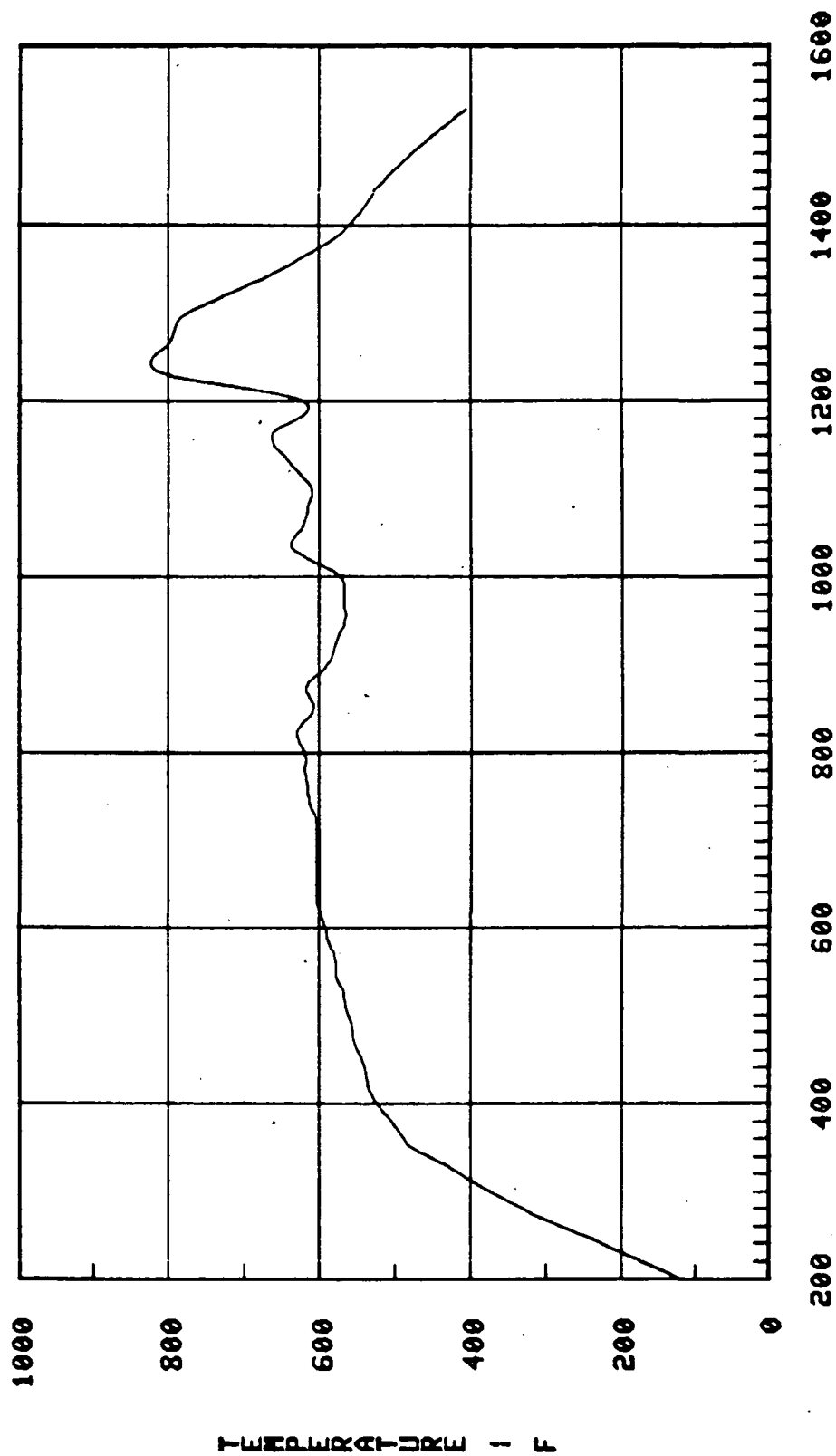
U0779910A



01/11/84

STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

U07T9910A

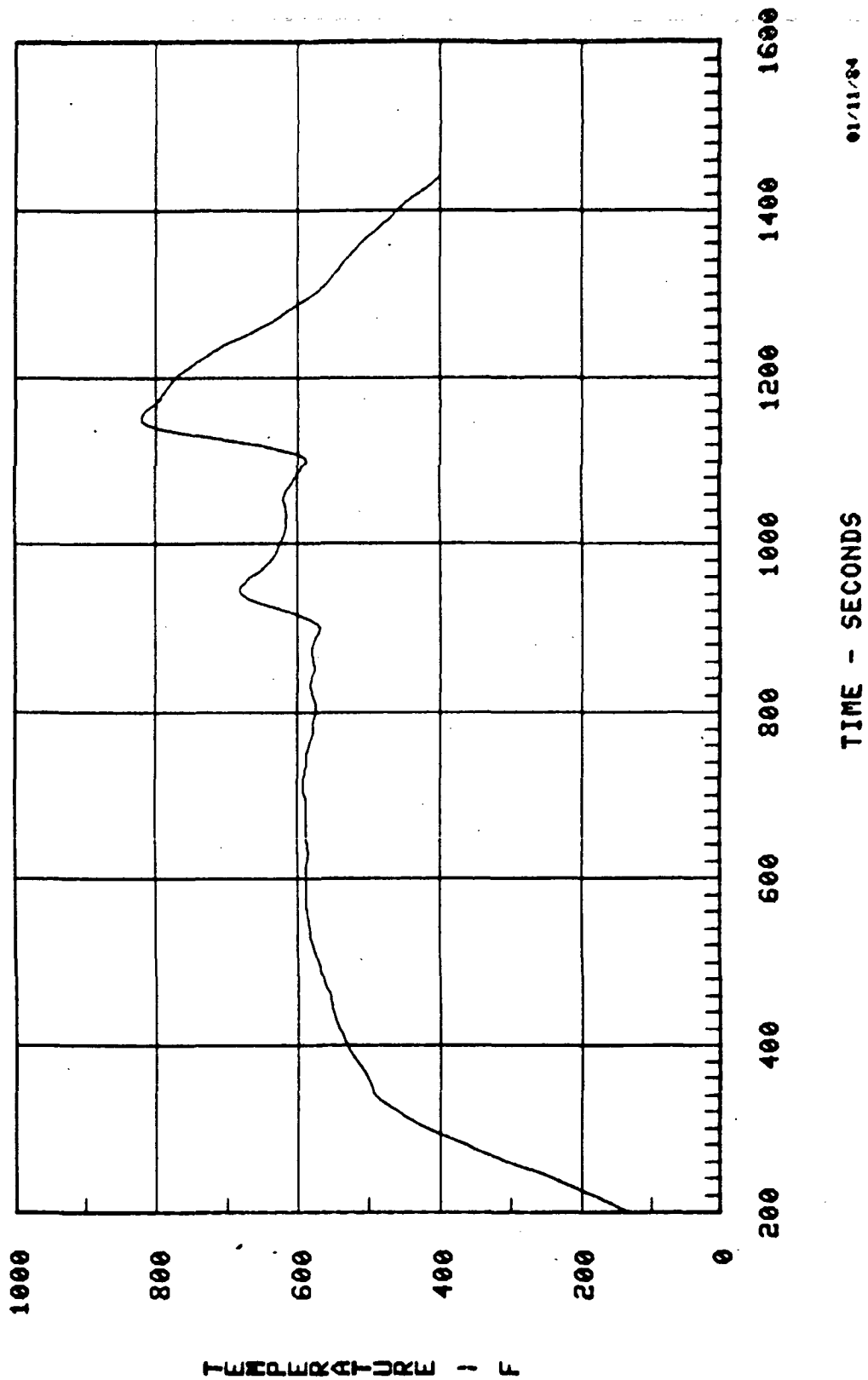


TIME - SECONDS

01/11/84

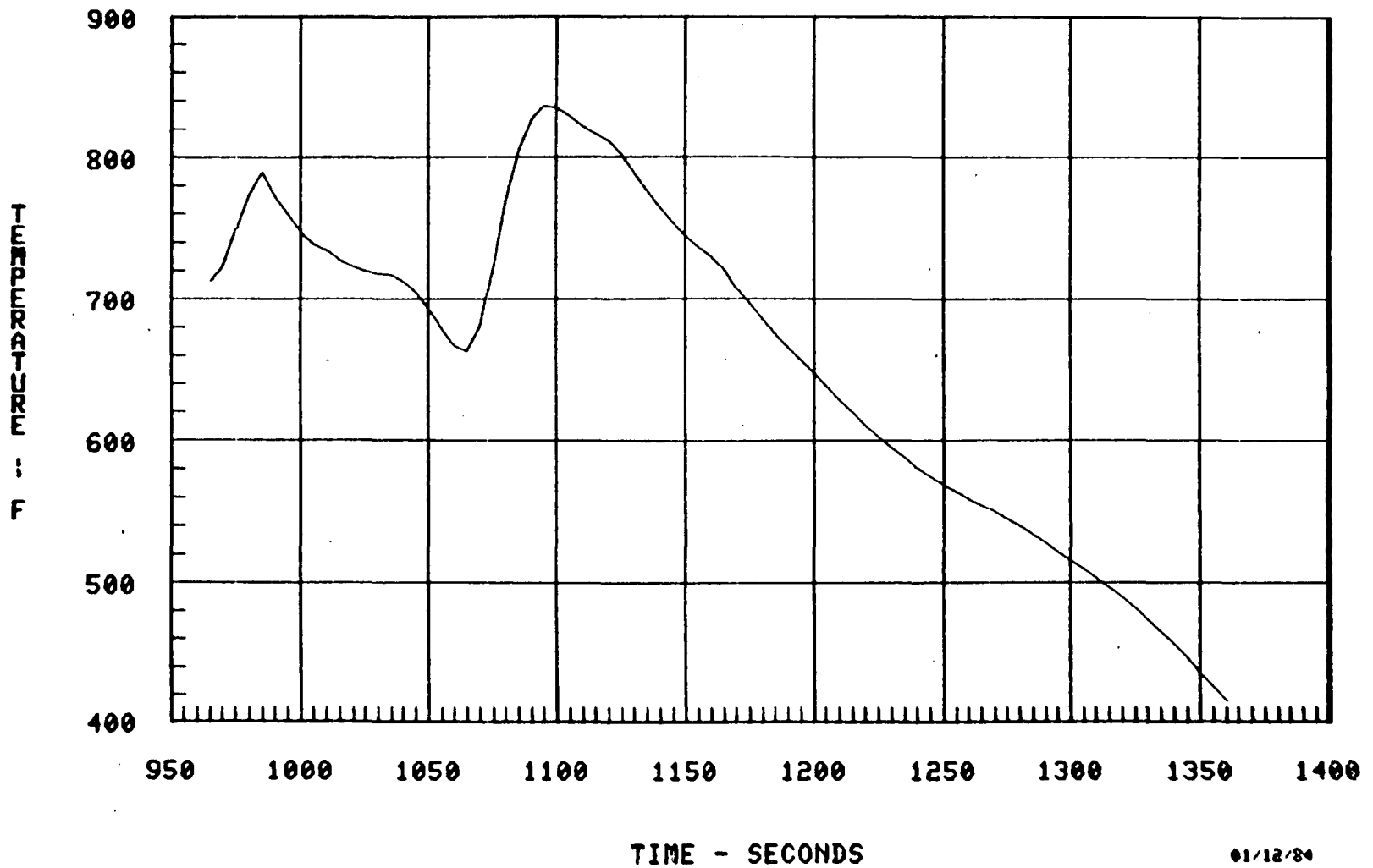
STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

U07T9910A



STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

U07T9910A



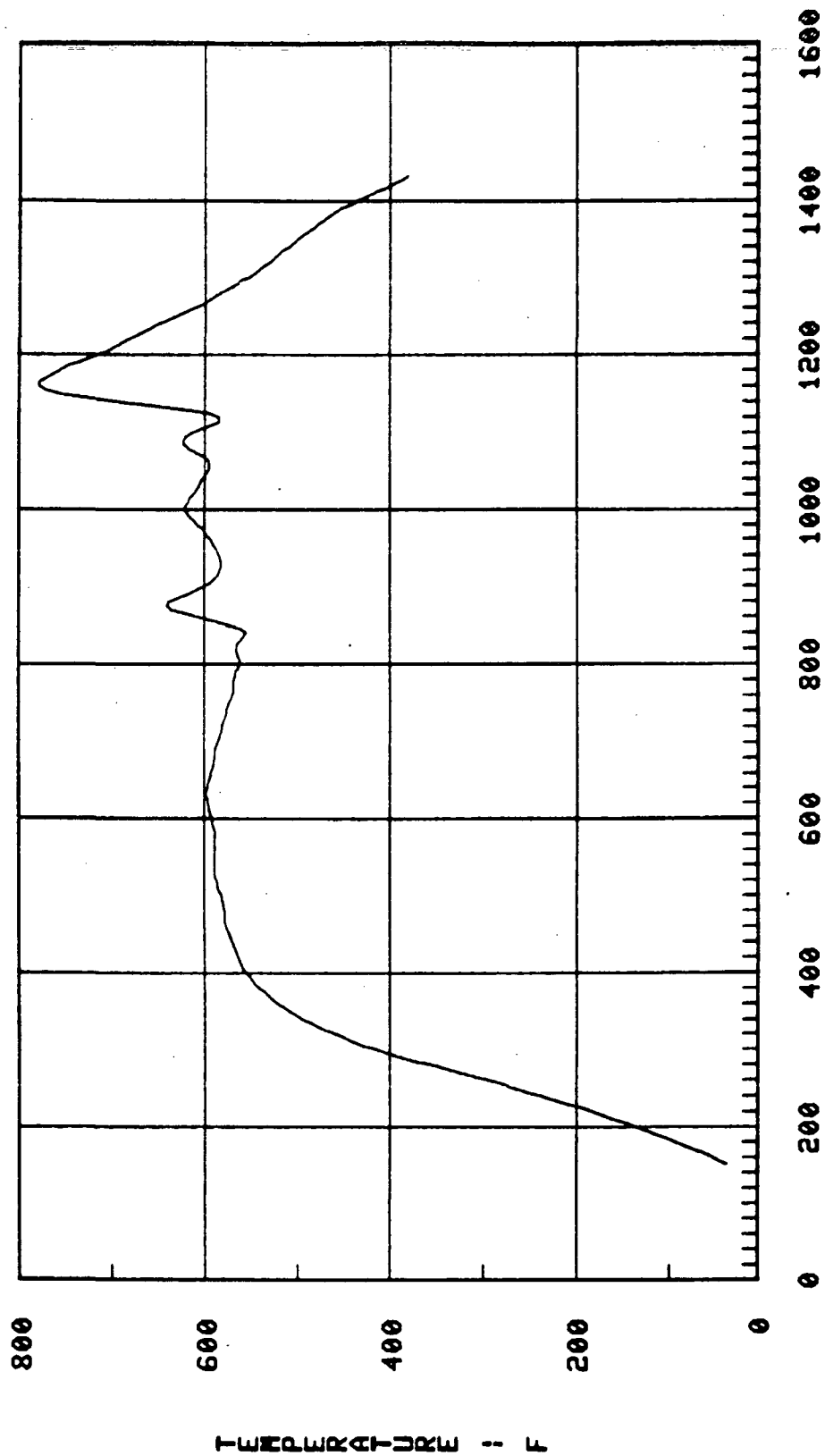
B-399

01/12/84



STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.31) Z=440

U07T9910A



01/12/84

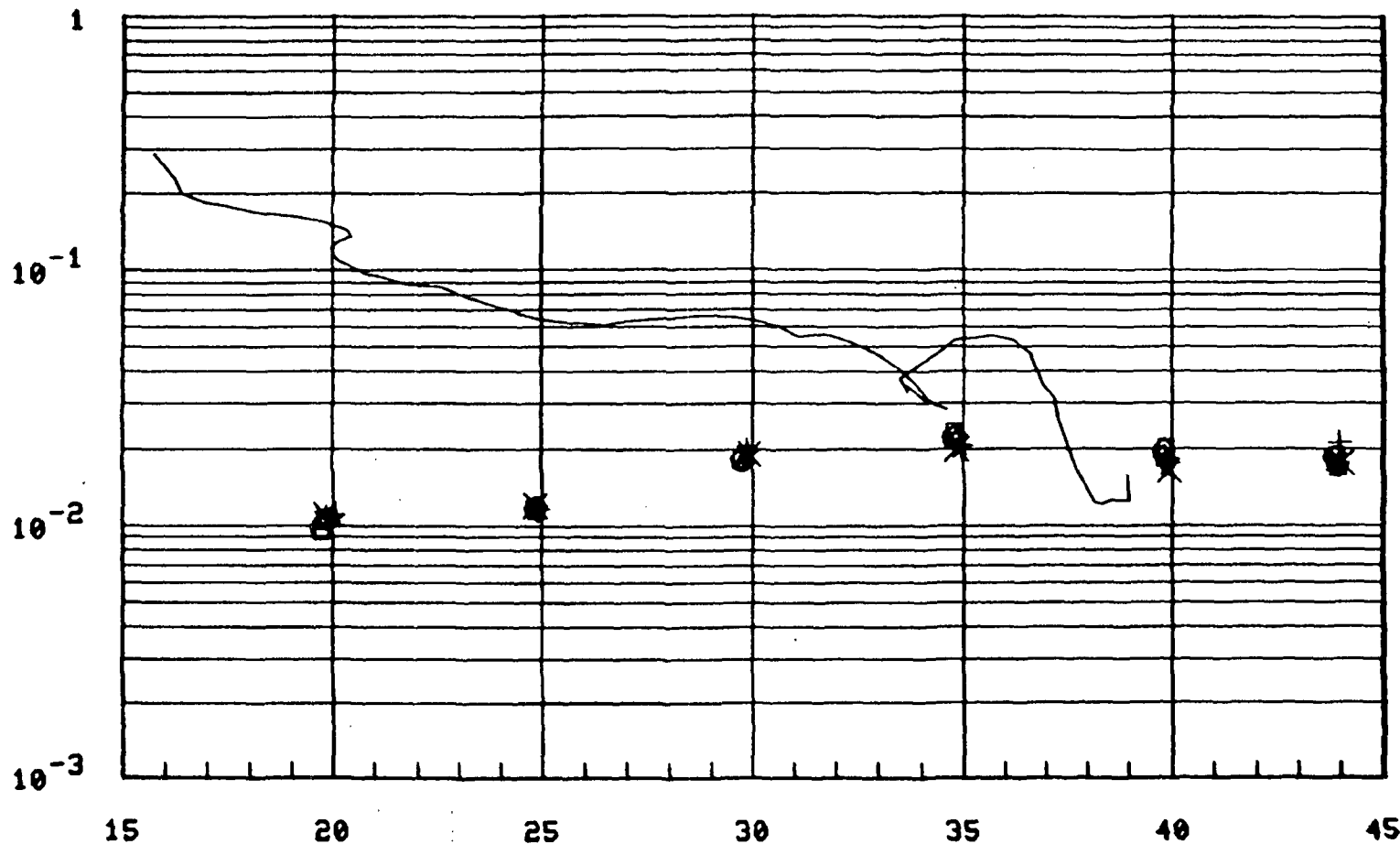
STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

○  
□  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9912A/H-REF 1065-1500 SEC

LINE COUNT - H/H-GRM



ANGLE-OF-ATTACK - DEG

01/11/84  
BASE TIME = 09049744.000 SEC.

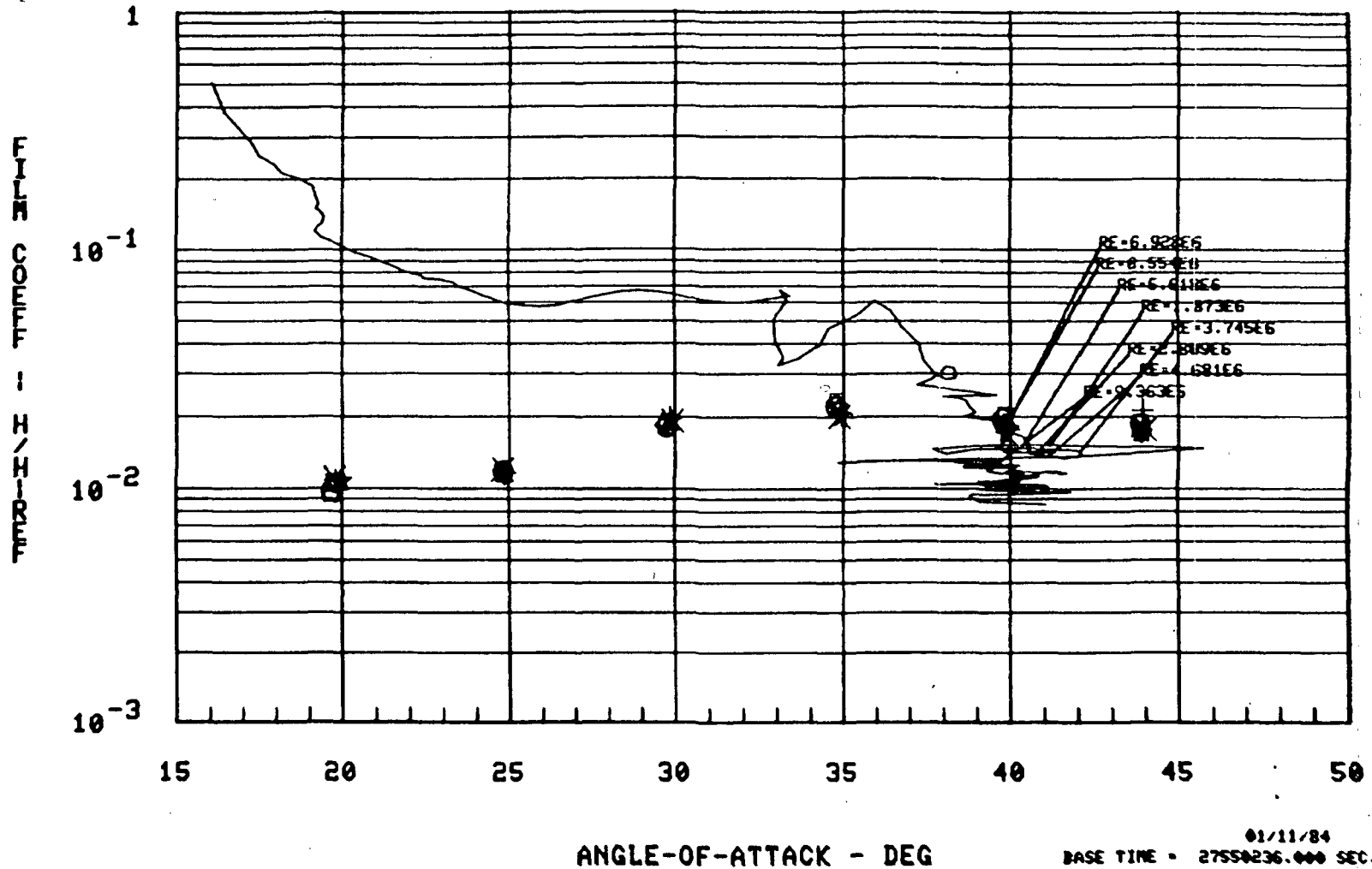
B-401

# STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

○  
□  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9912A/H-REF 200-1530 SEC

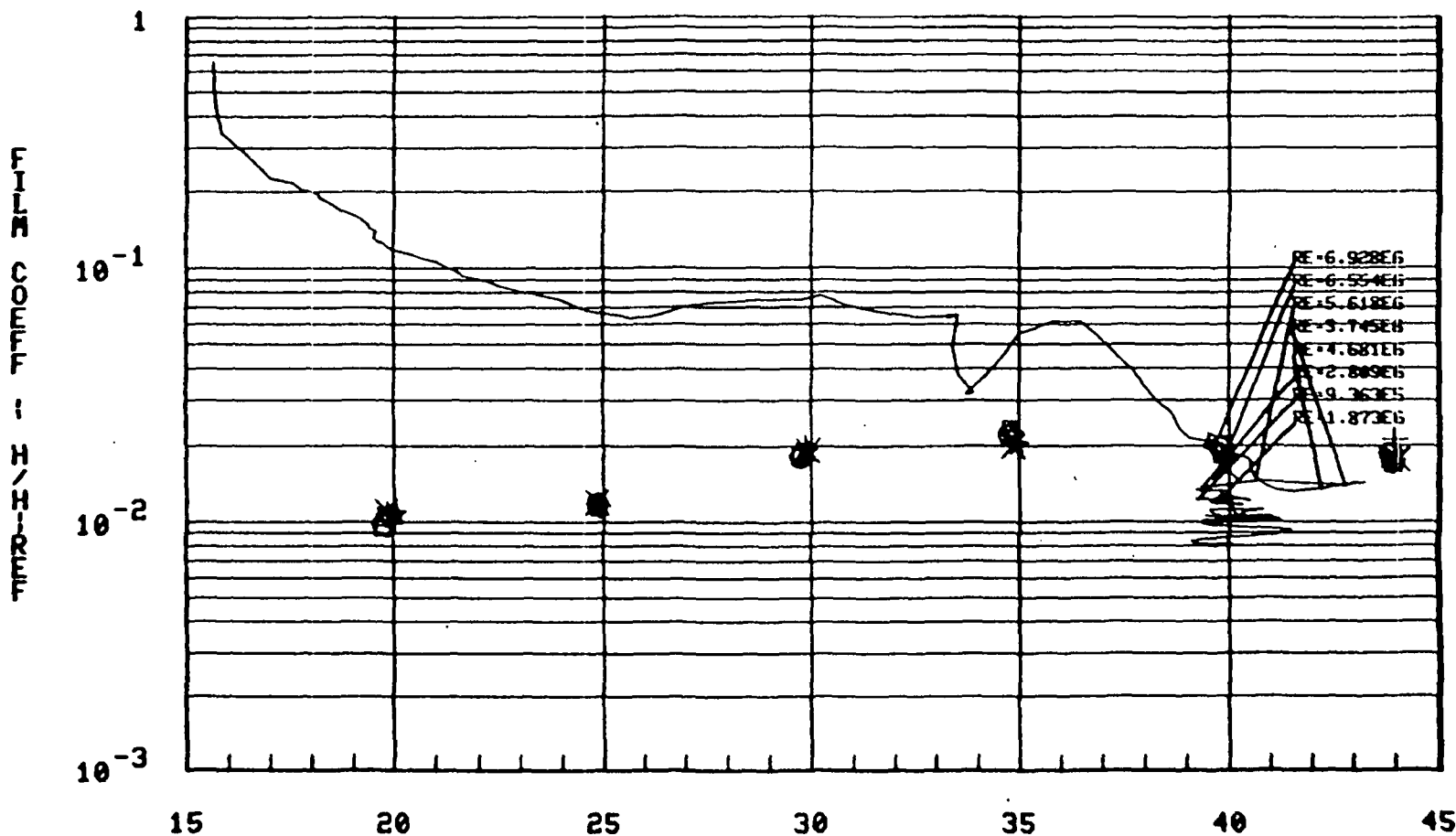


# STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

O  
 □  
 △  
 \*  
 +  
 X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9912A/H-REF 200-1440 SEC



ANGLE-OF-ATTACK - DEG

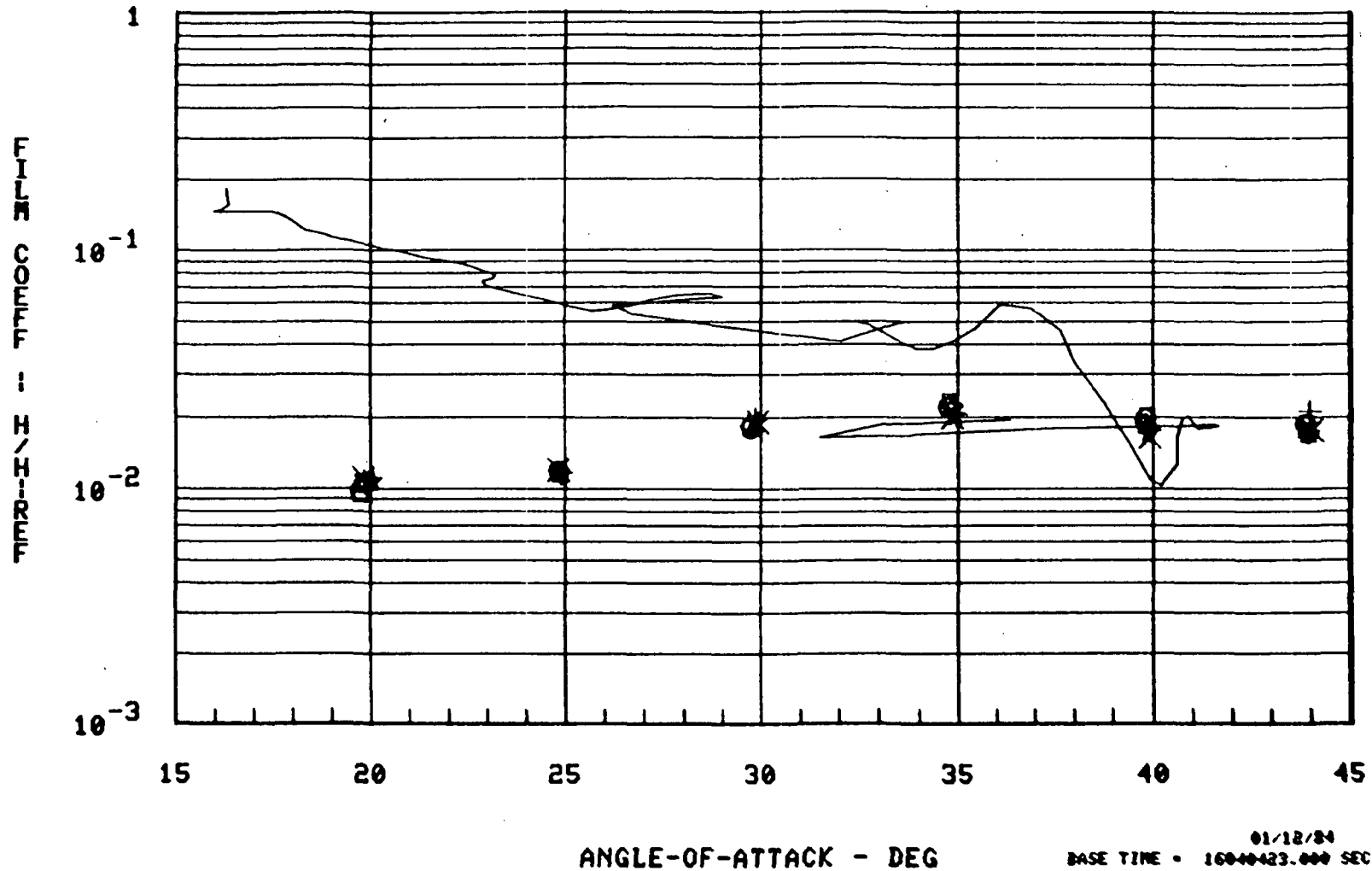
01/11/84  
 BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

O  
 □  
 △  
 ★  
 +  
 X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9912A/H-REF 965-1360 SEC

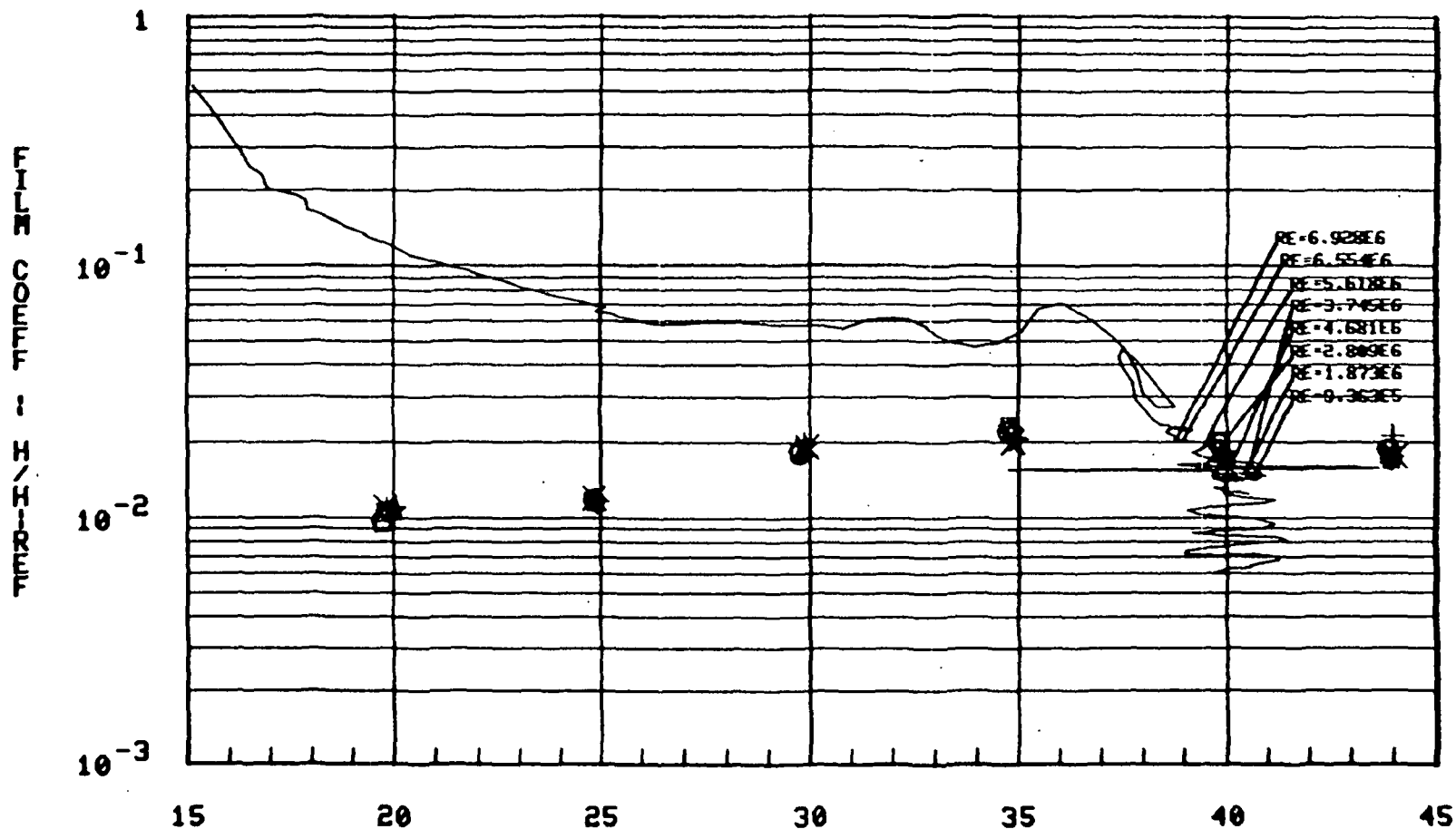


# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

○  
□  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9912A/H-REF 150-1430 SEC



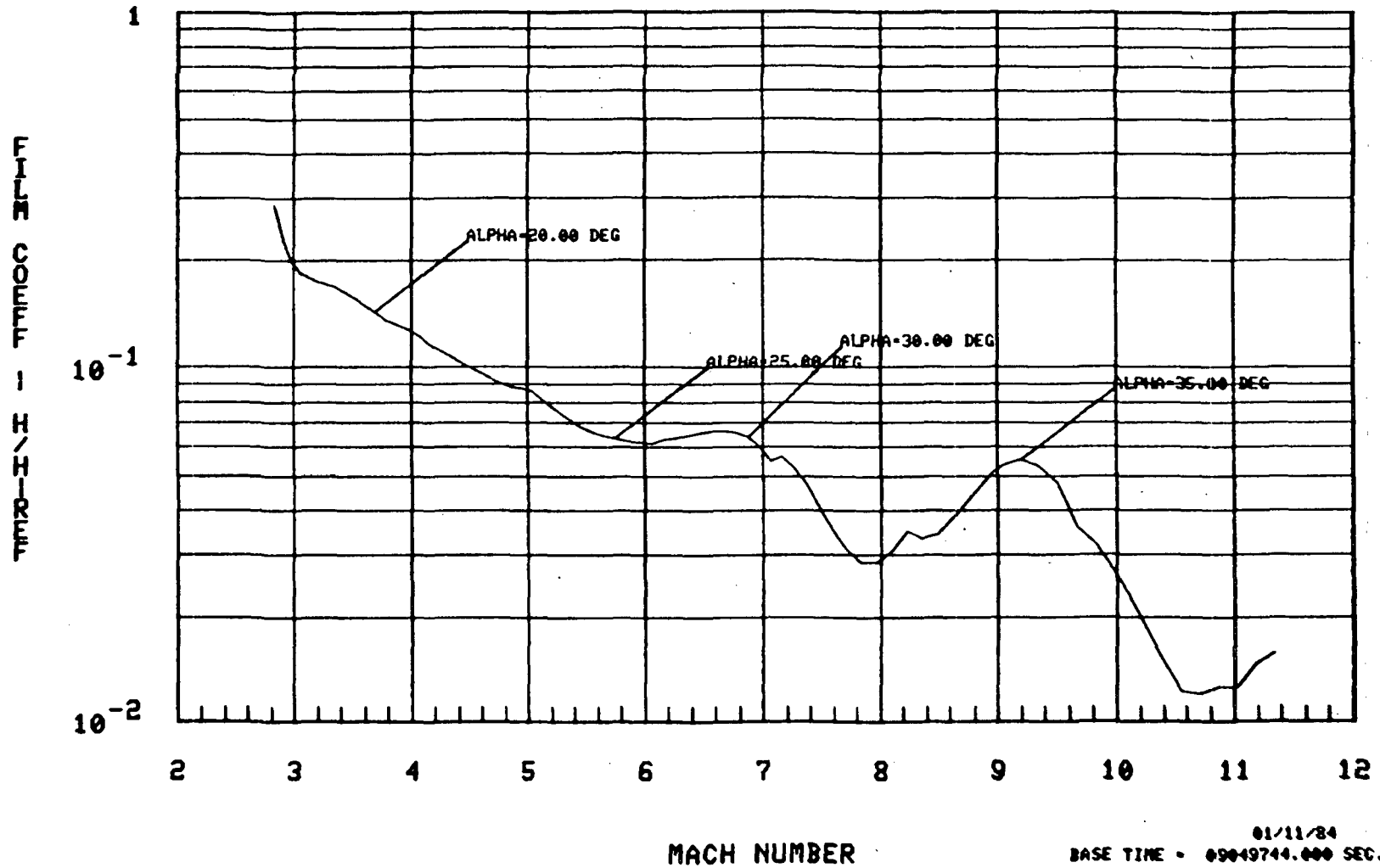
B-405

ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE PLB DOOR $X/L=0.40$ ) $Z=440$

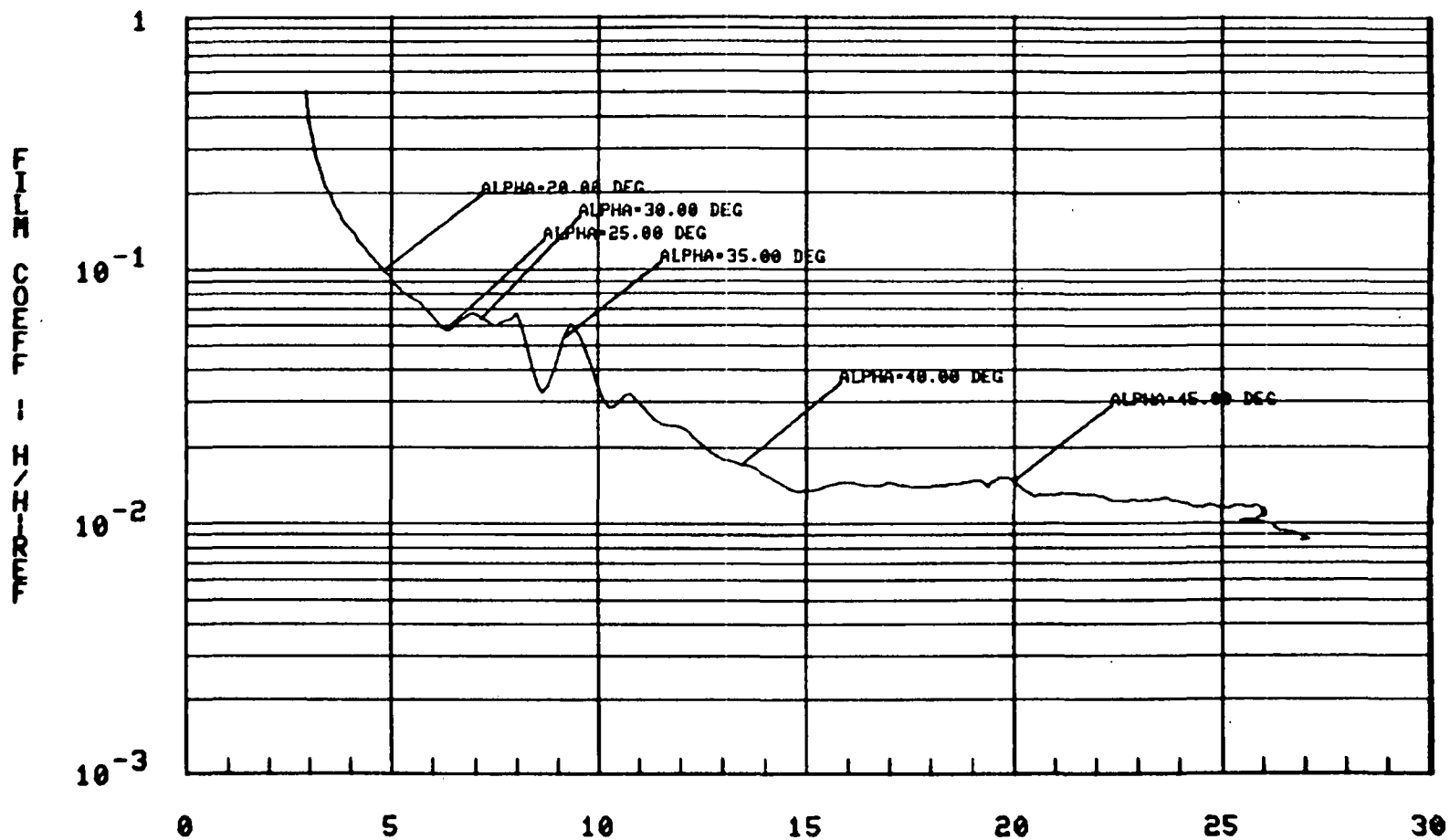
U07T9912A/H-REF 1065-1500 SEC



B-406

# STS-2 (107 FT LENGTH SIDE PLB DOOR $X/L=0.40$ ) $Z=440$

U07T9912A/H-REF 200-1530 SEC



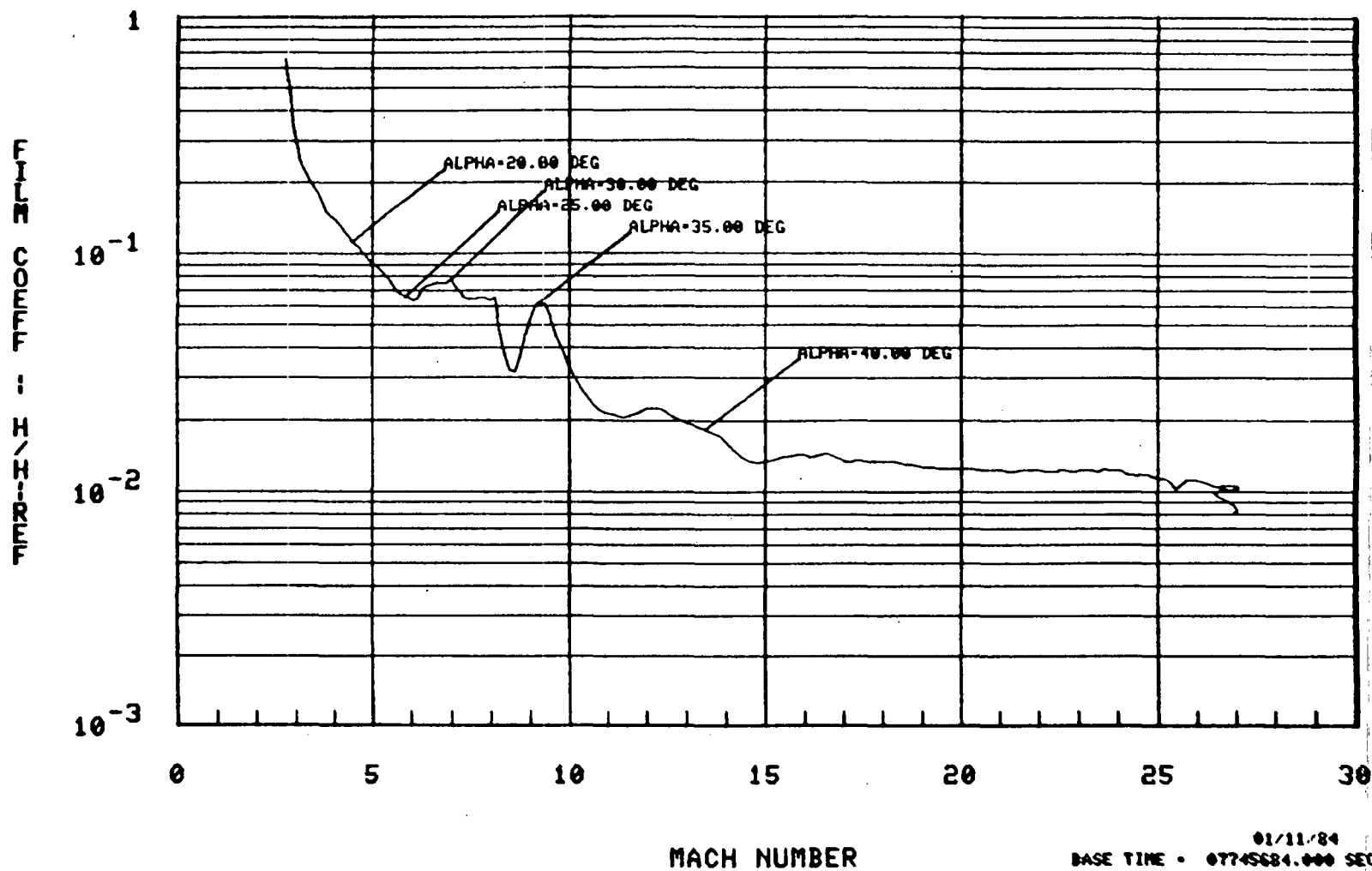
MACH NUMBER

01/11/84  
BASE TIME = 87550236.000 SEC.



# STS-3 (107 FT LENGTH SIDE PLB DOOR $X/L=0.40$ ) $Z=440$

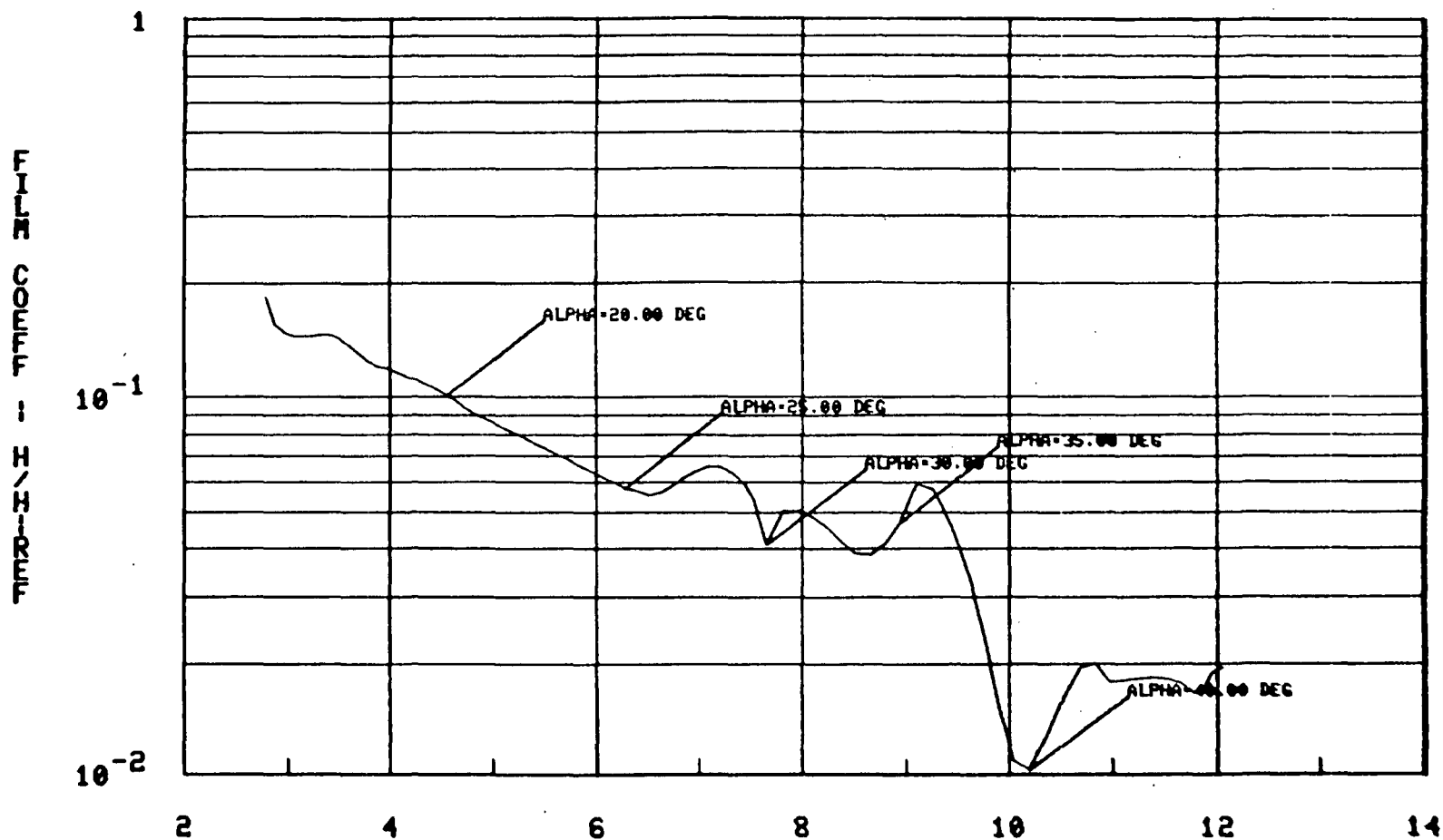
U07T9912A/H-REF 200-1440 SEC



B-408

# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.40$ ) $Z=440$

U07T9912A/H-REF 965-1360. SEC



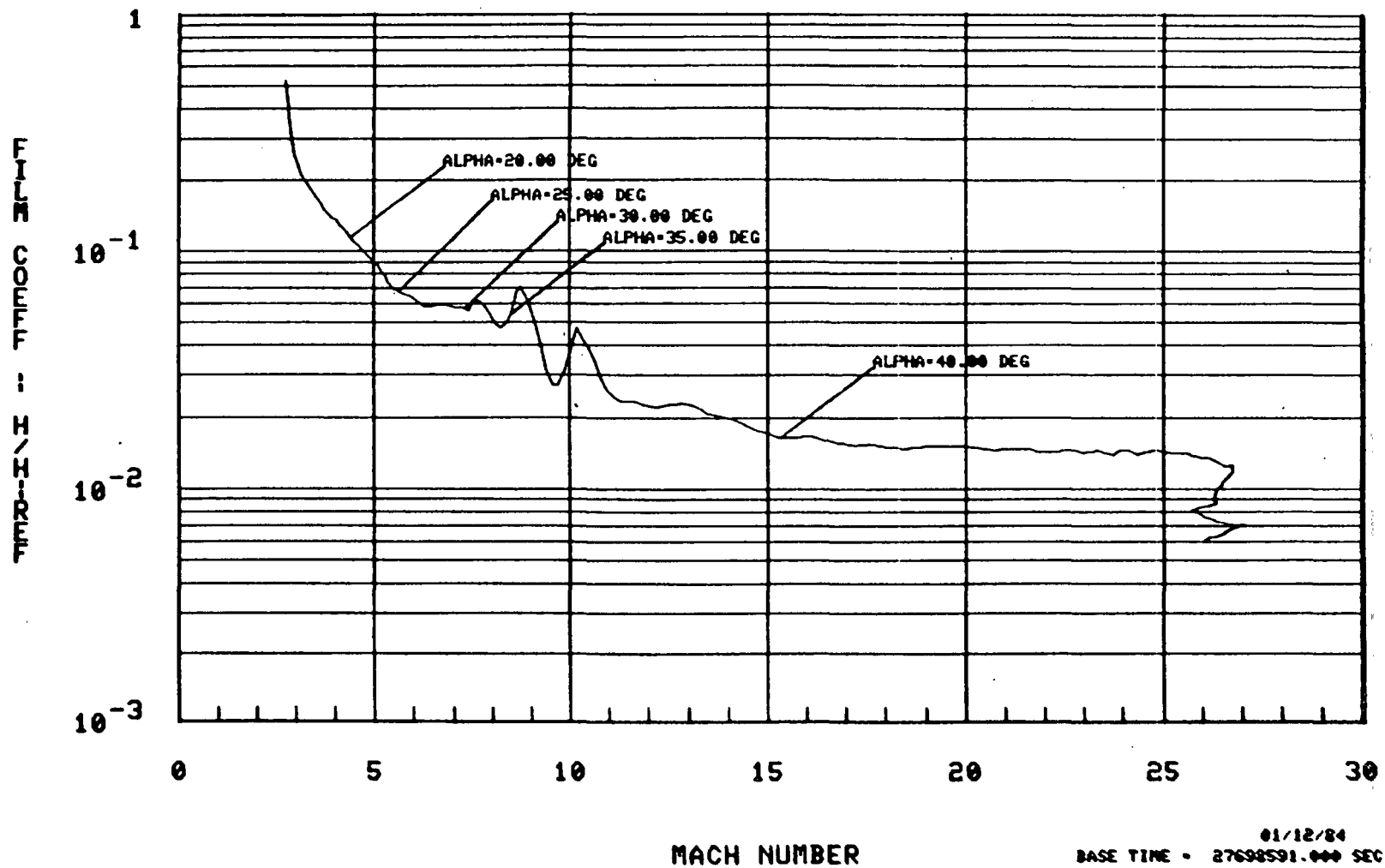
B-409

MACH NUMBER

01/12/84  
BASE TIME = 1600023.000 SEC.

STS-5 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.40$ )  $Z=440$

U07T9912A/H-REF 150-1430 SEC



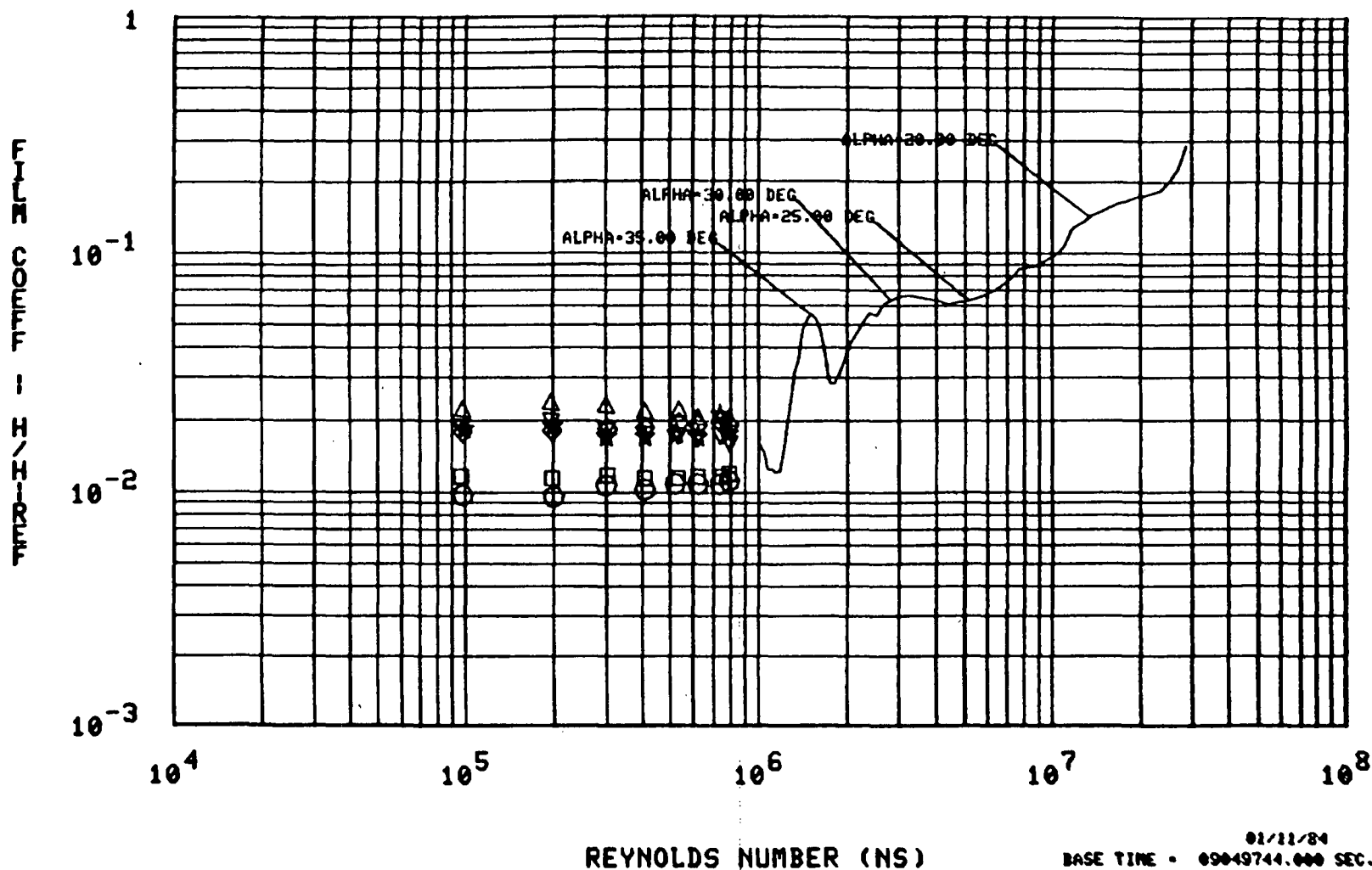
B-410

# STS-1 (107 FT LENGTH SIDE PLB DOOR $X/L=0.40$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9912A/H-REF 1065-1500 SEC



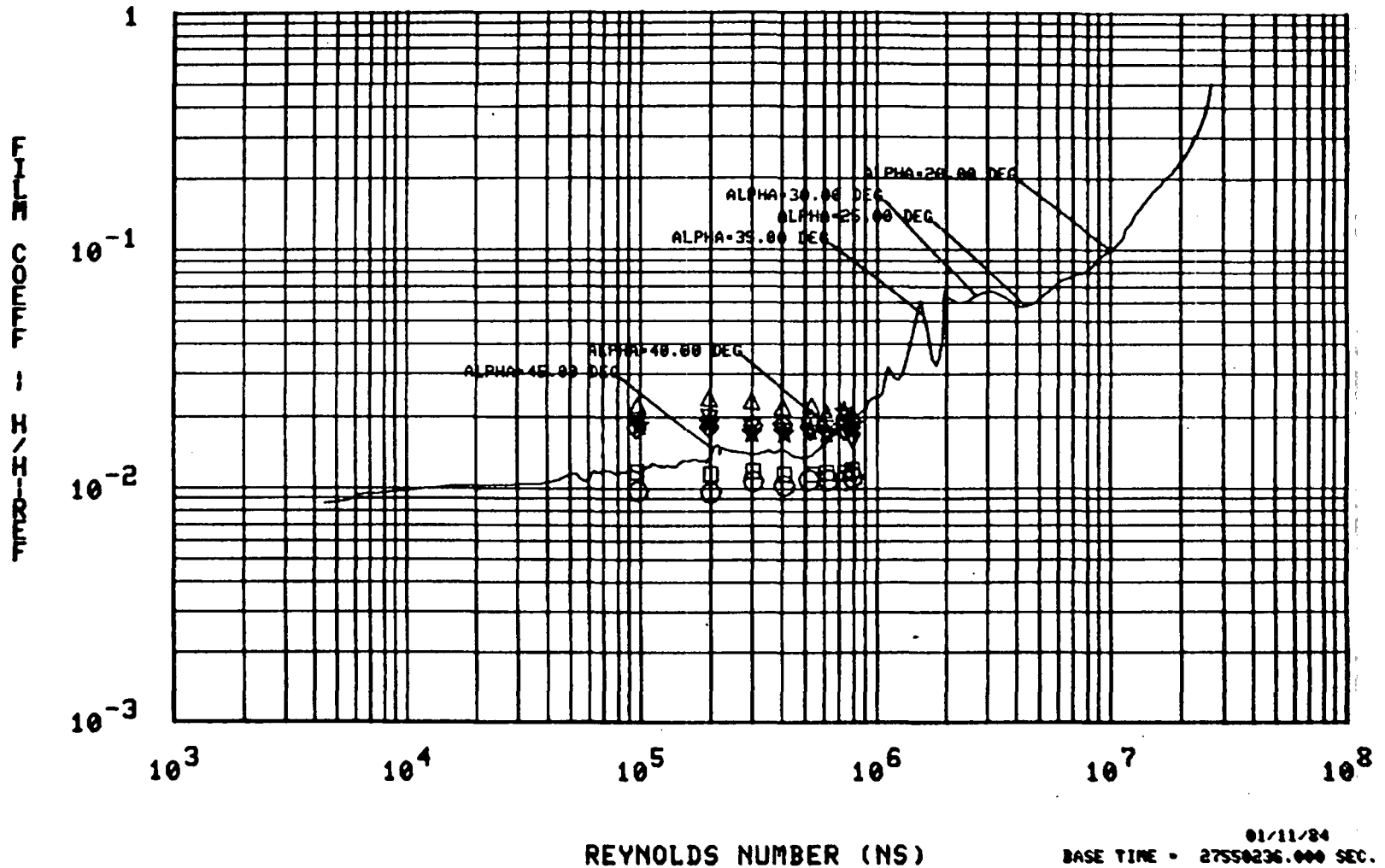
B-417

# STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

○  
◇  
△  
▽  
×

OH74 ALPHA • 20 DEGREES  
OH74 ALPHA • 25 DEGREES  
OH74 ALPHA • 30 DEGREES  
OH74 ALPHA • 35 DEGREES  
OH74 ALPHA • 40 DEGREES  
OH74 ALPHA • 44 DEGREES

U07T9912A/H-REF 200-1530 SEC



B-412

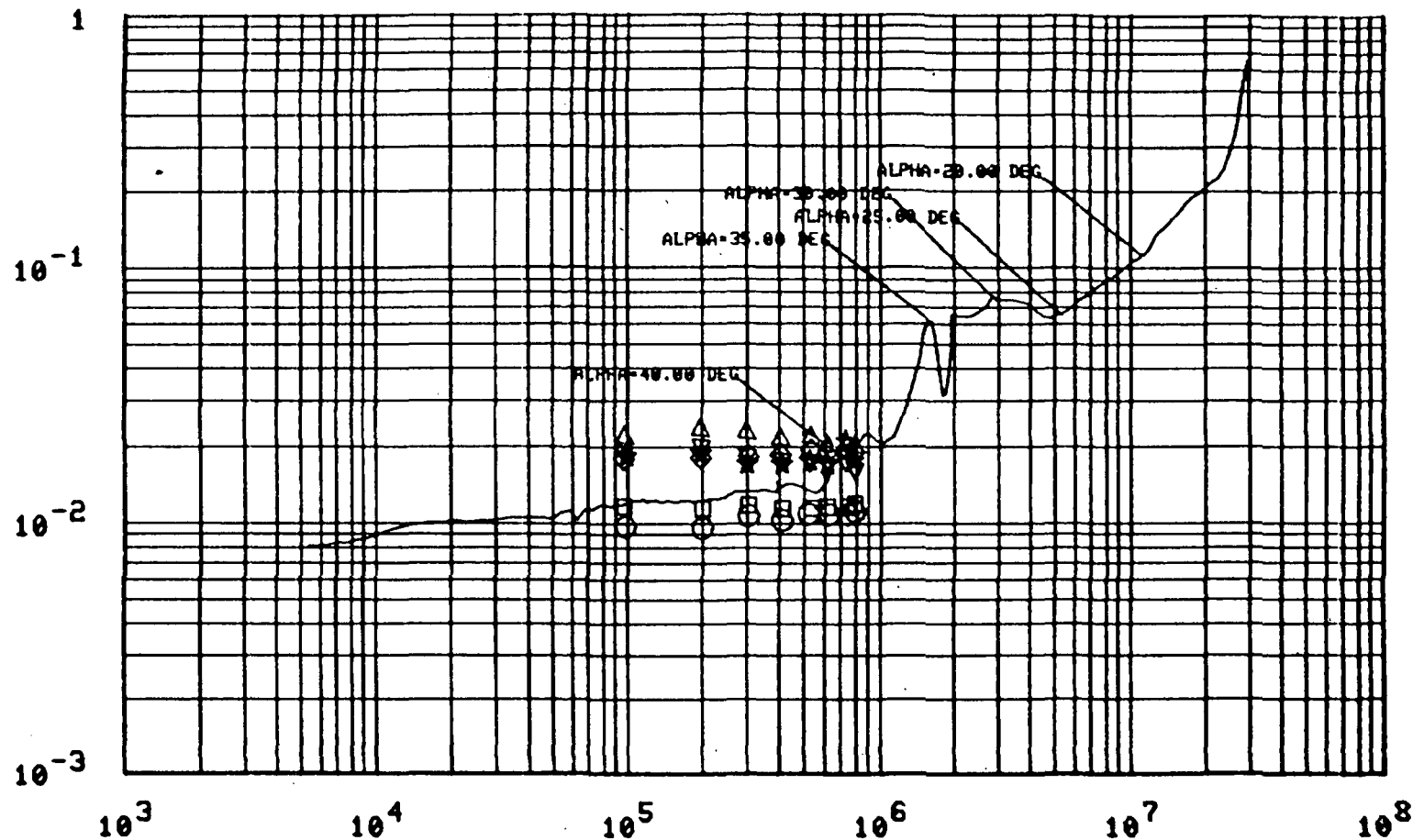
# STS-3 (107 FT LENGTH SIDE PLB DOOR $X/L=0.40$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9912A/H-REF 200-1440 SEC

WAKE COEFF -  $H/H_{\infty}$



REYNOLDS NUMBER (NS)

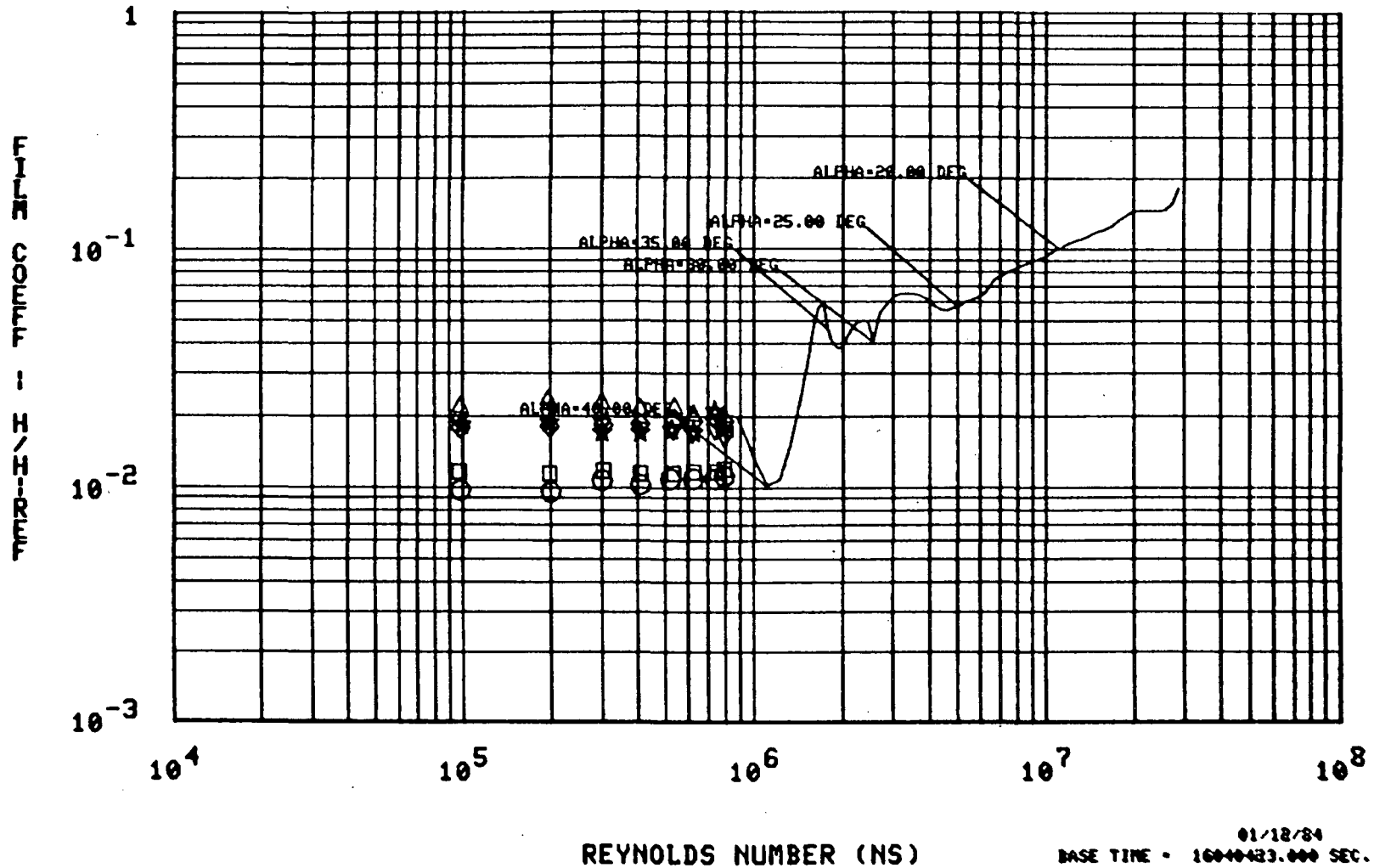
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9912A/H-REF 965-1360 SEC



B-414

# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

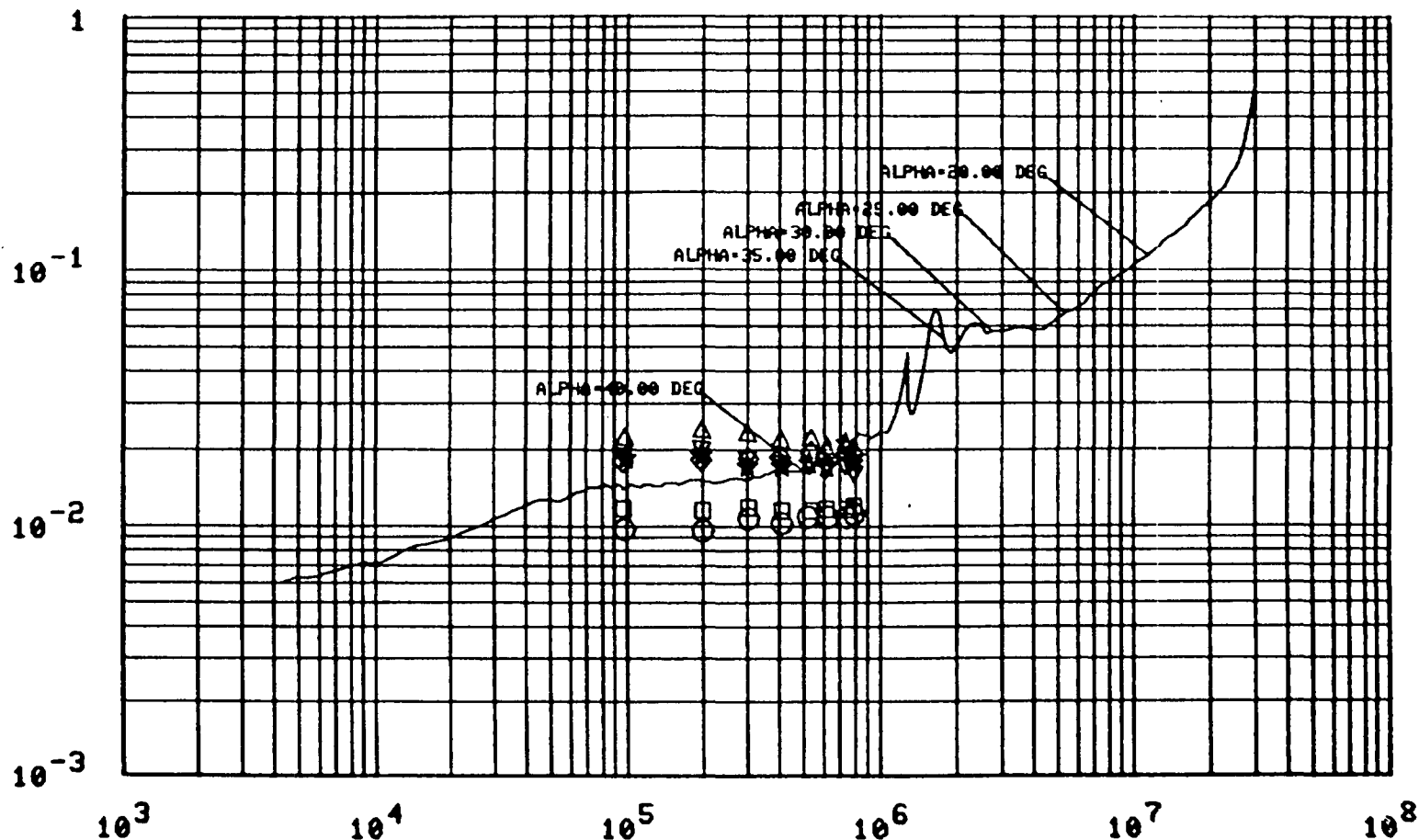
○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9912A/H-REF 150-1430 SEC

LINE CODE - H-H-000

B-415



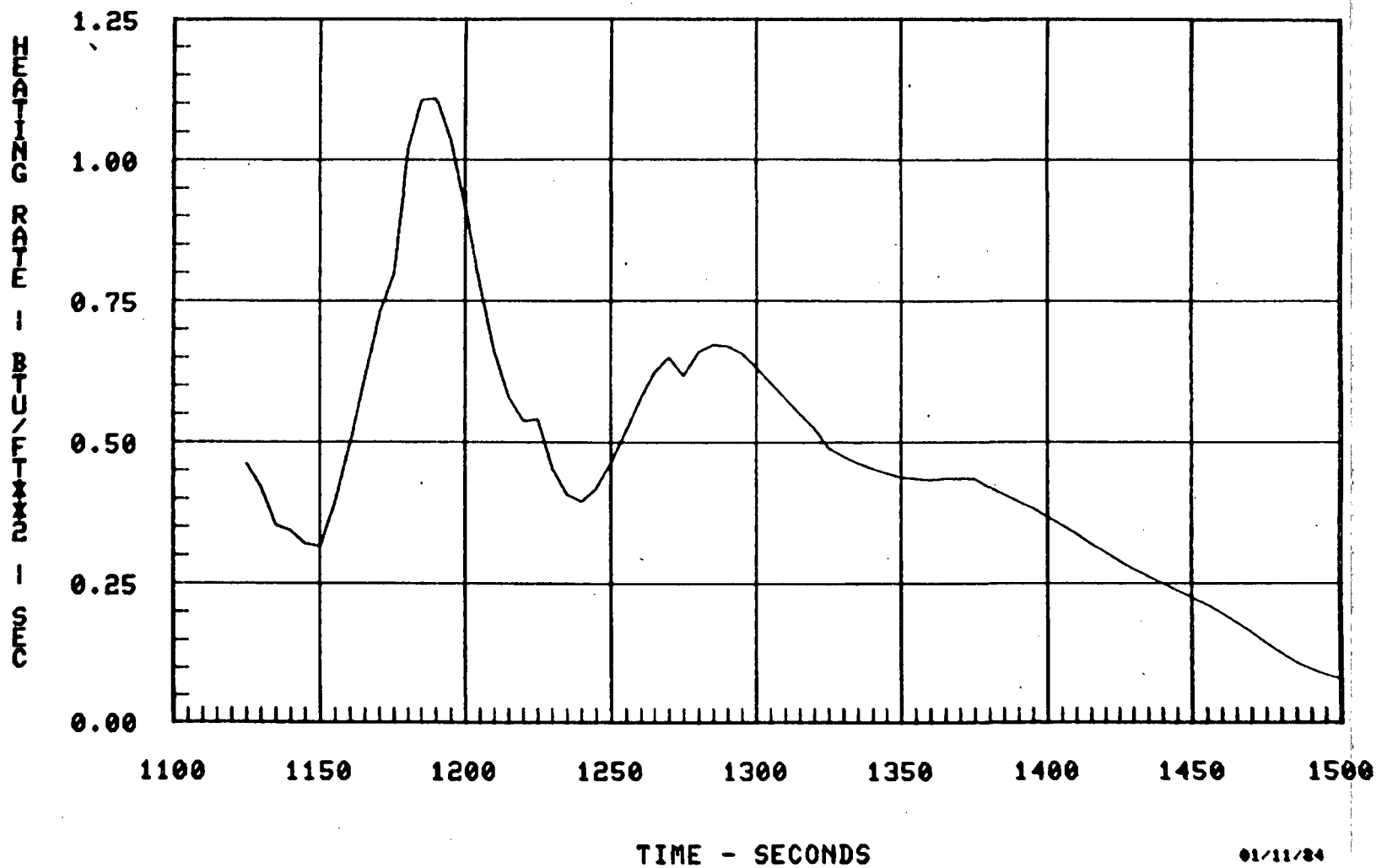
REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27695591.000 SEC.



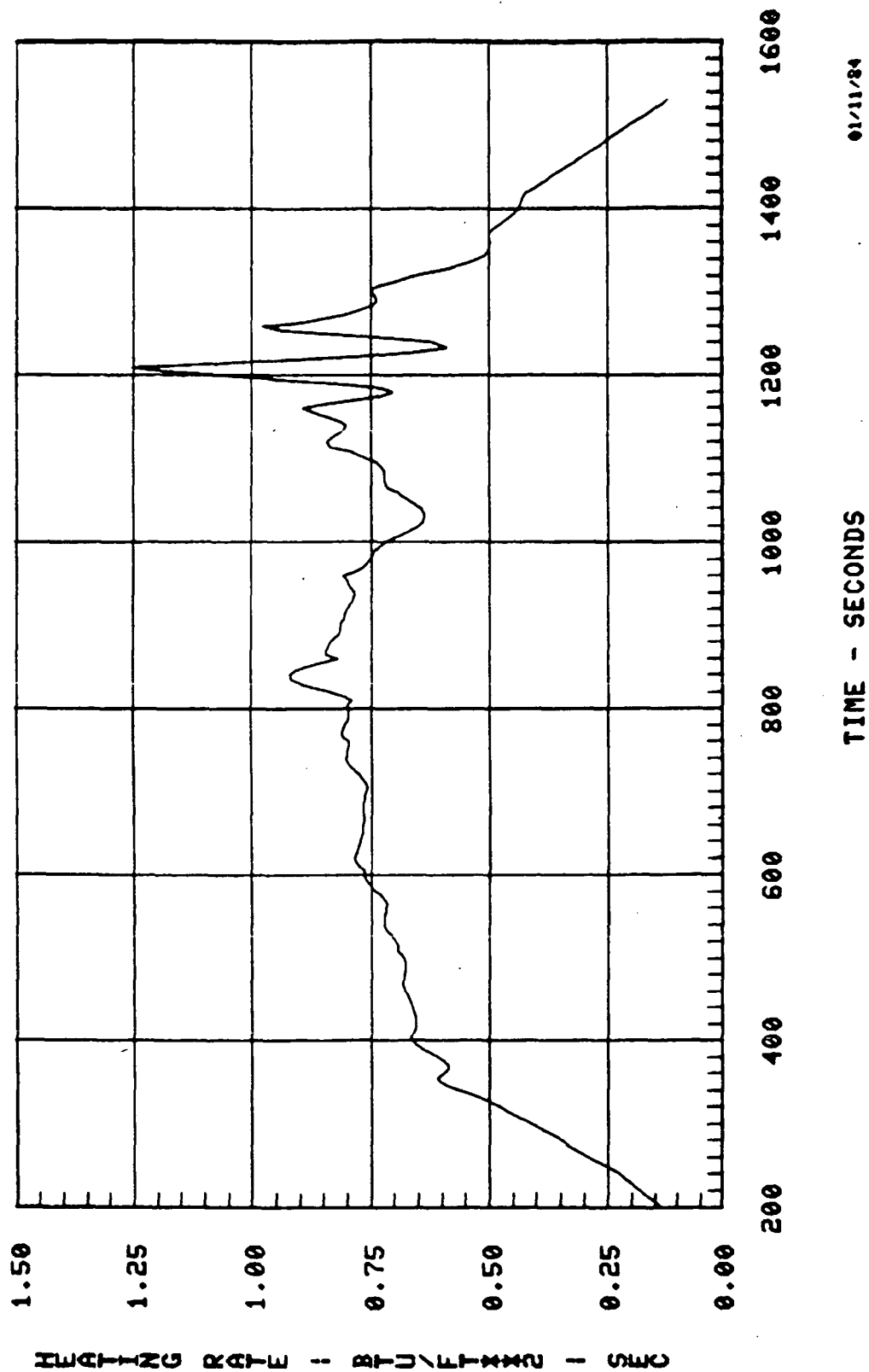
STS-1 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.40$ )  $Z=440$

U07T9912A



STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

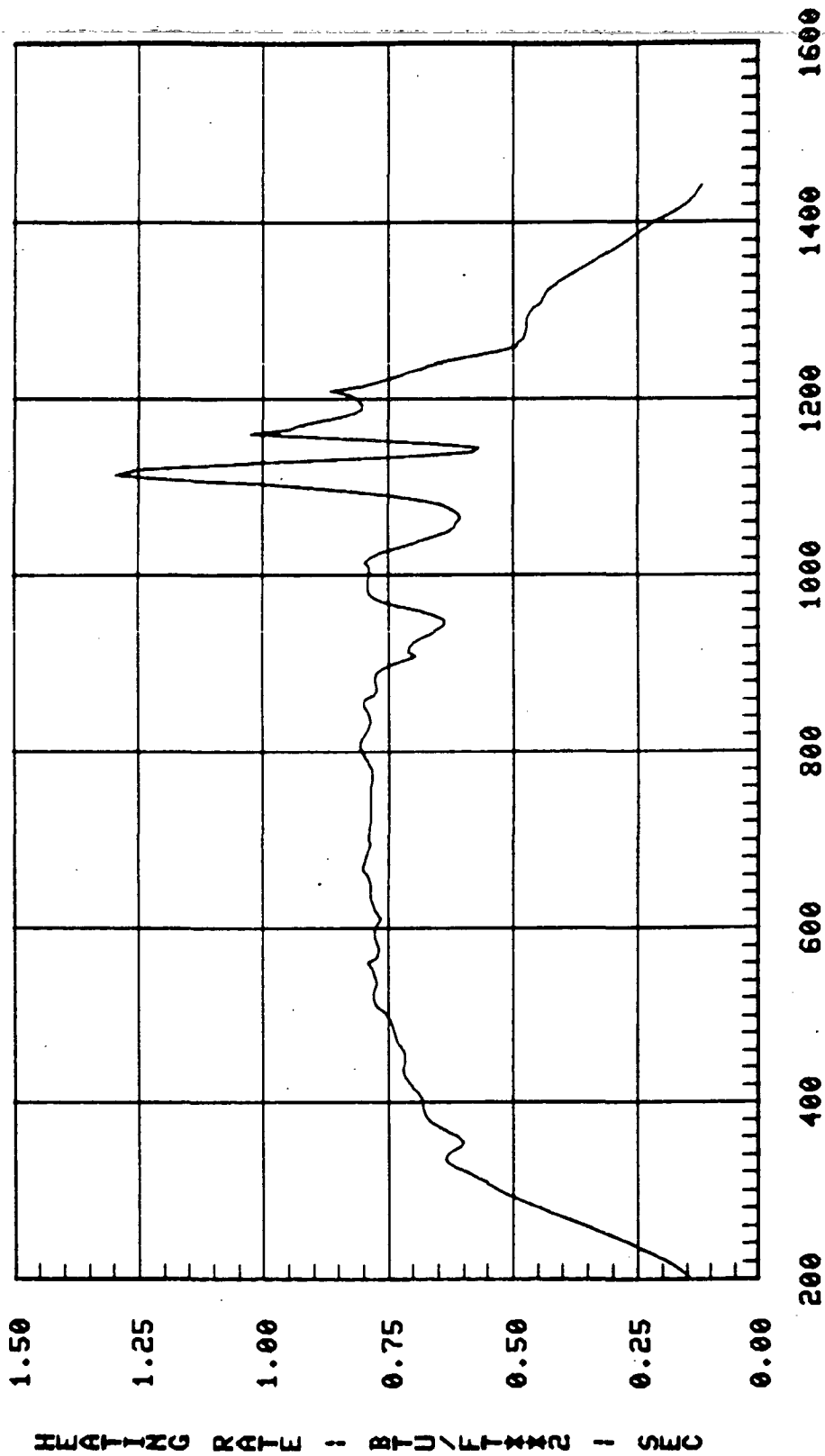
U0779912A



01/11/84

STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

U07T9912A

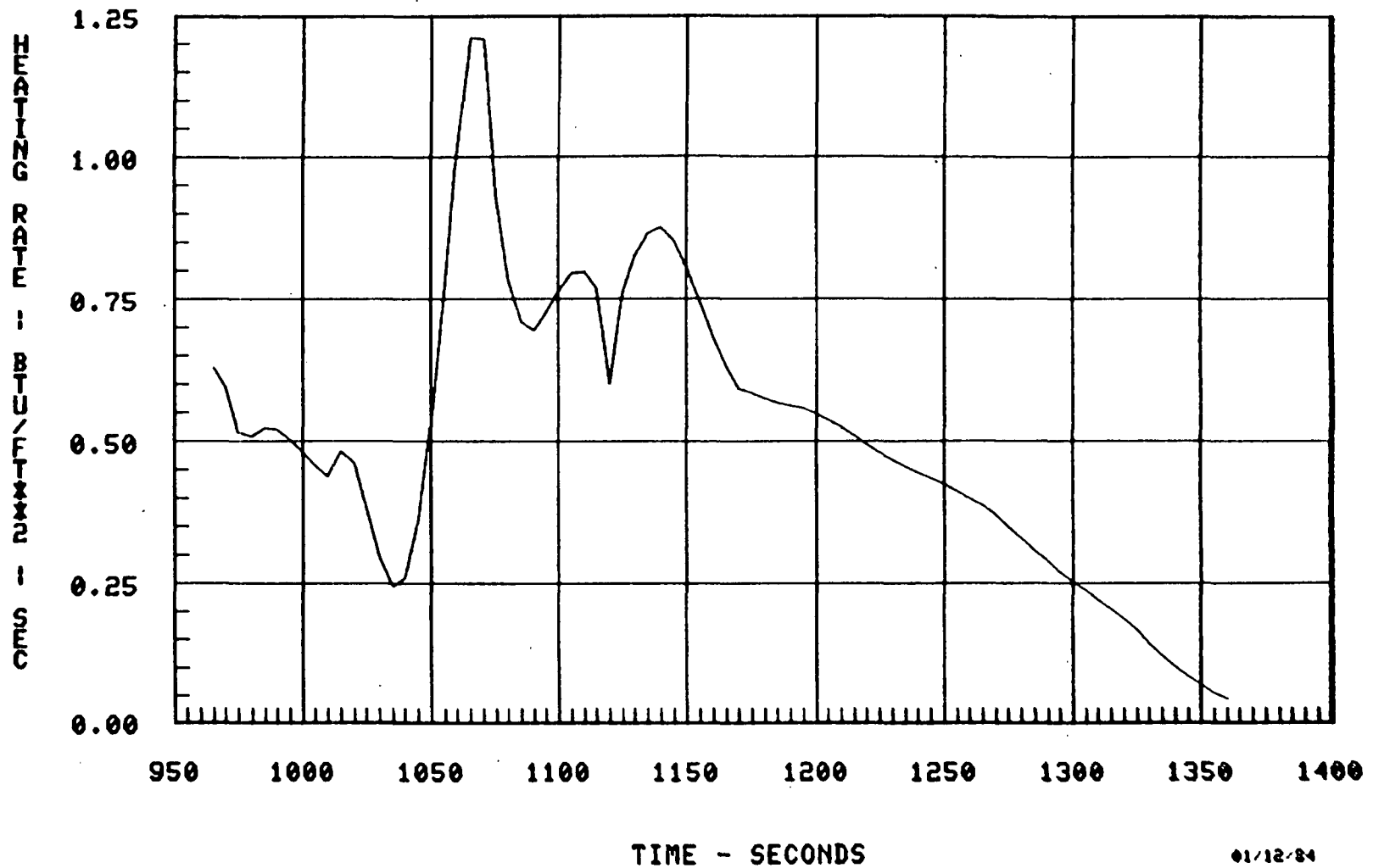


TIME - SECONDS

01/11/34

STS-4 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.40$ )  $Z=440$

U07T9912A

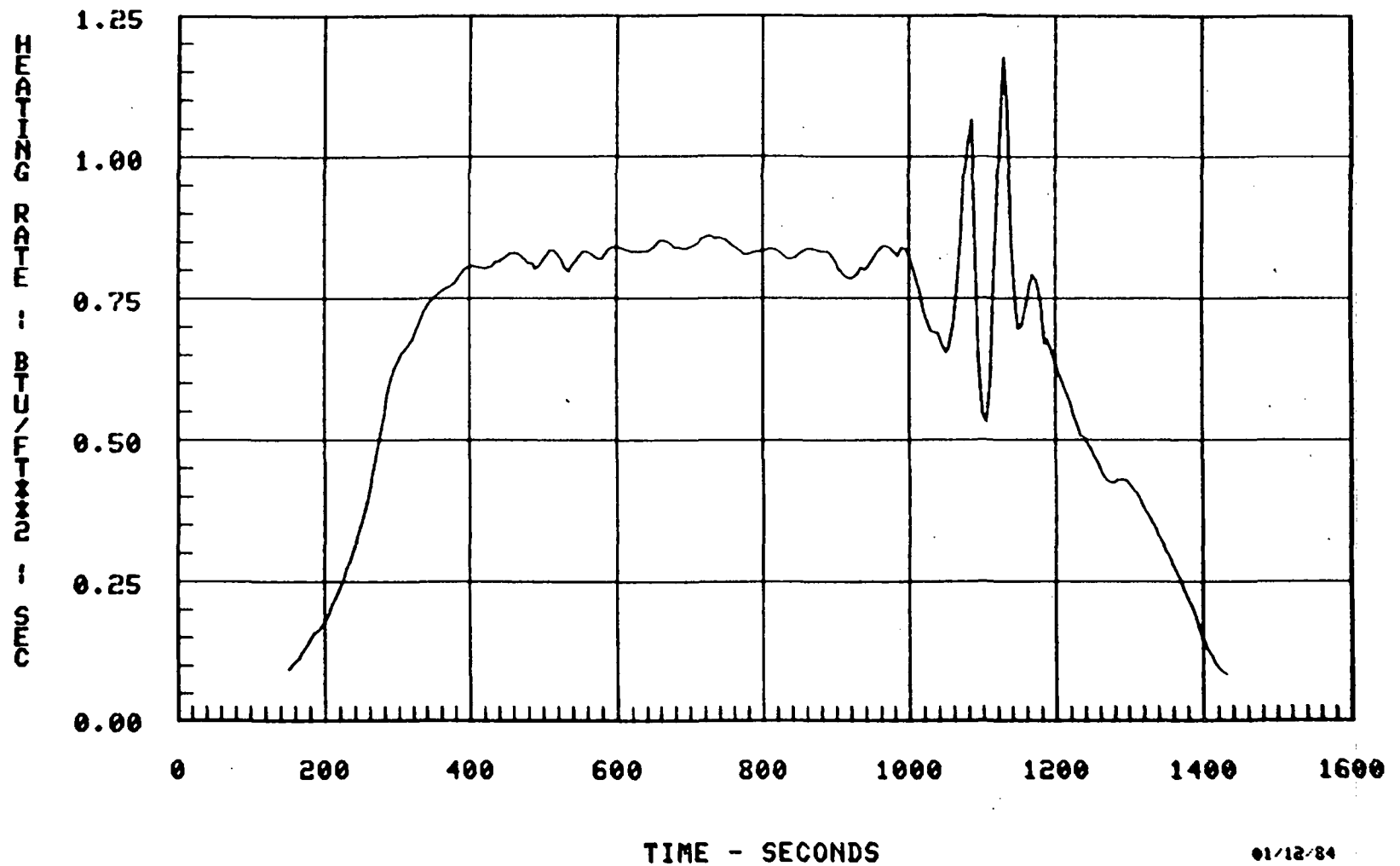


B-419

01/12/84

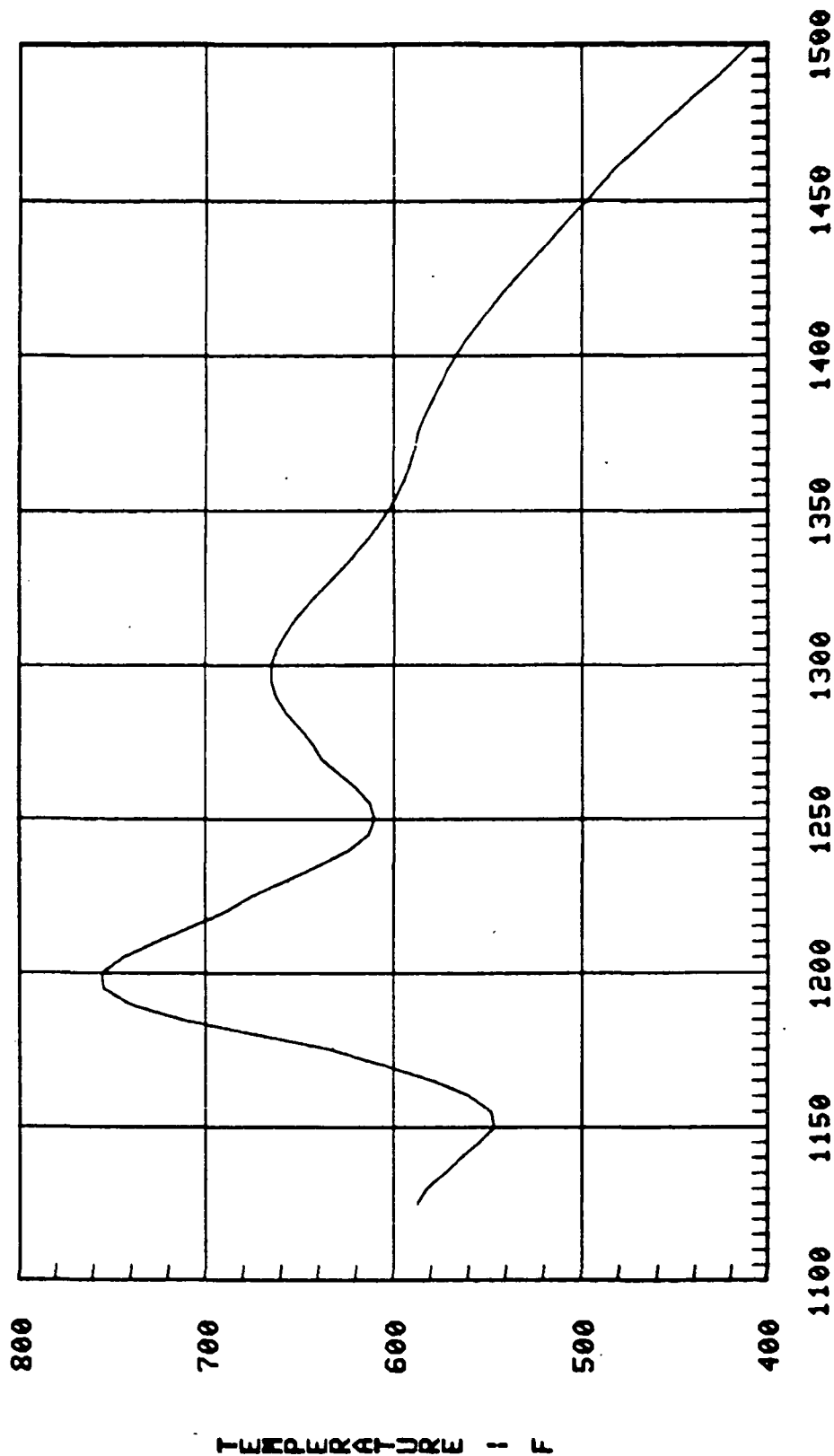
STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

U07T9912A



STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

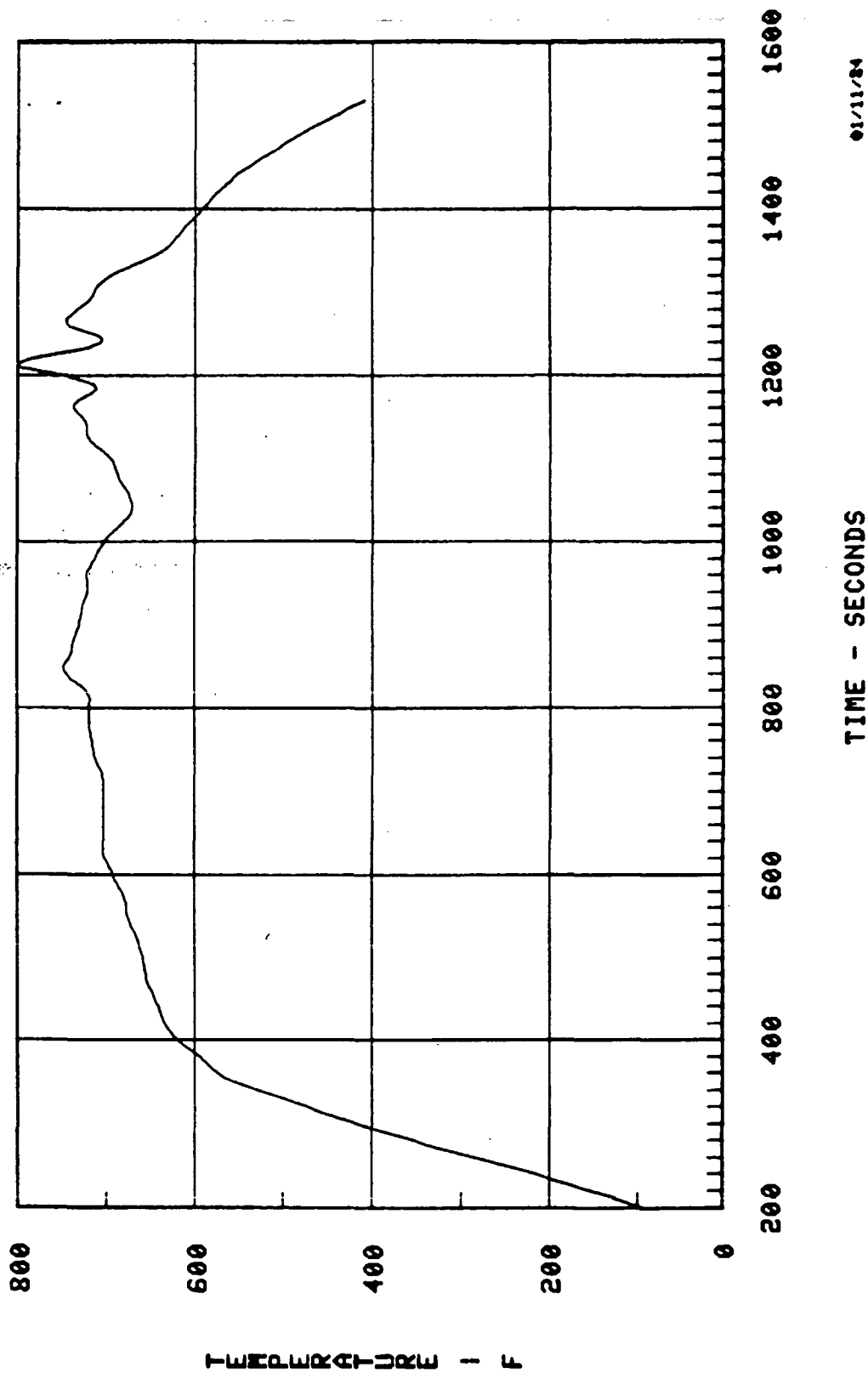
U07T9912A



01/11/84

STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

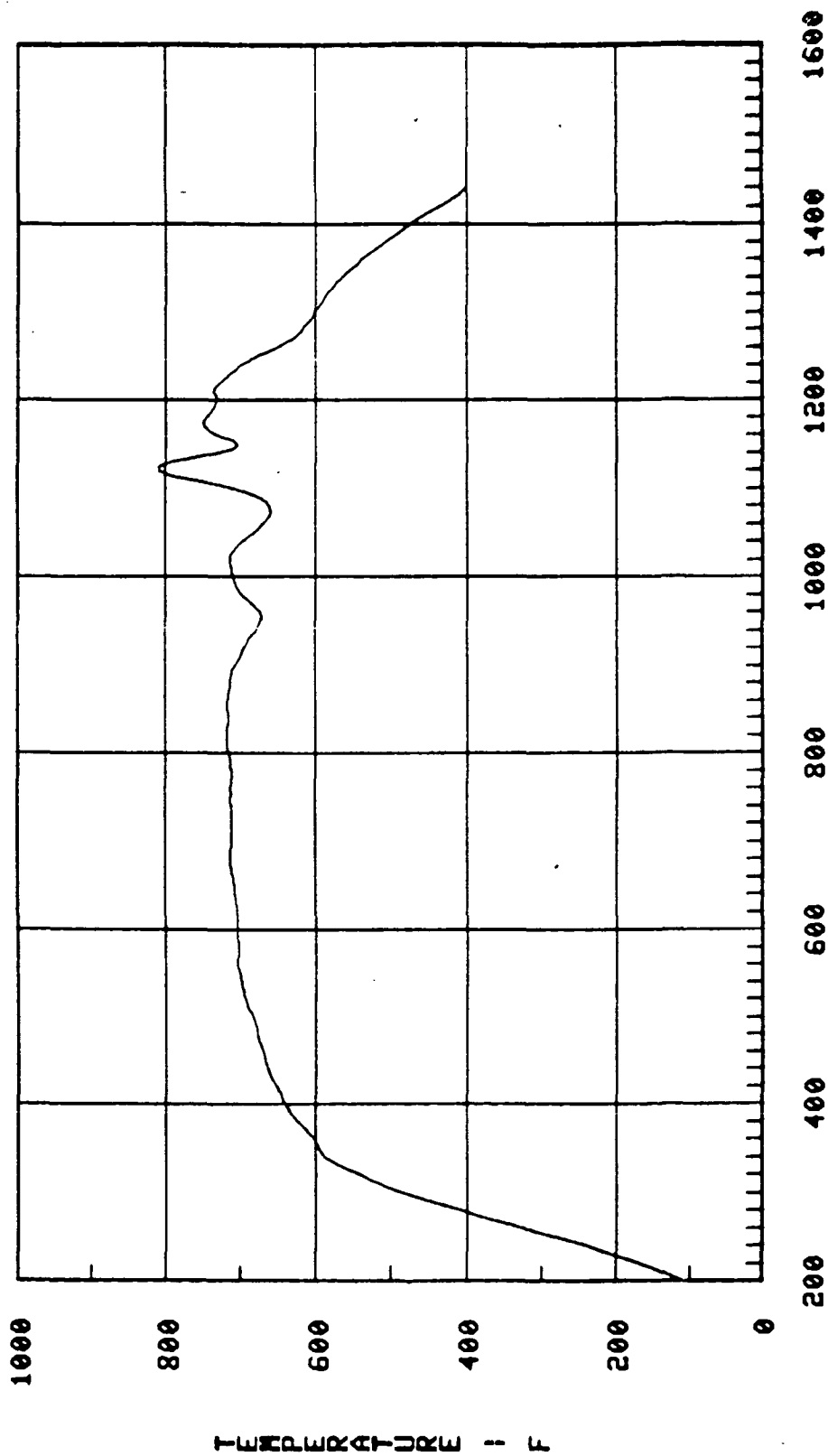
U07T9912A



01/11/84

STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

U07T9912A



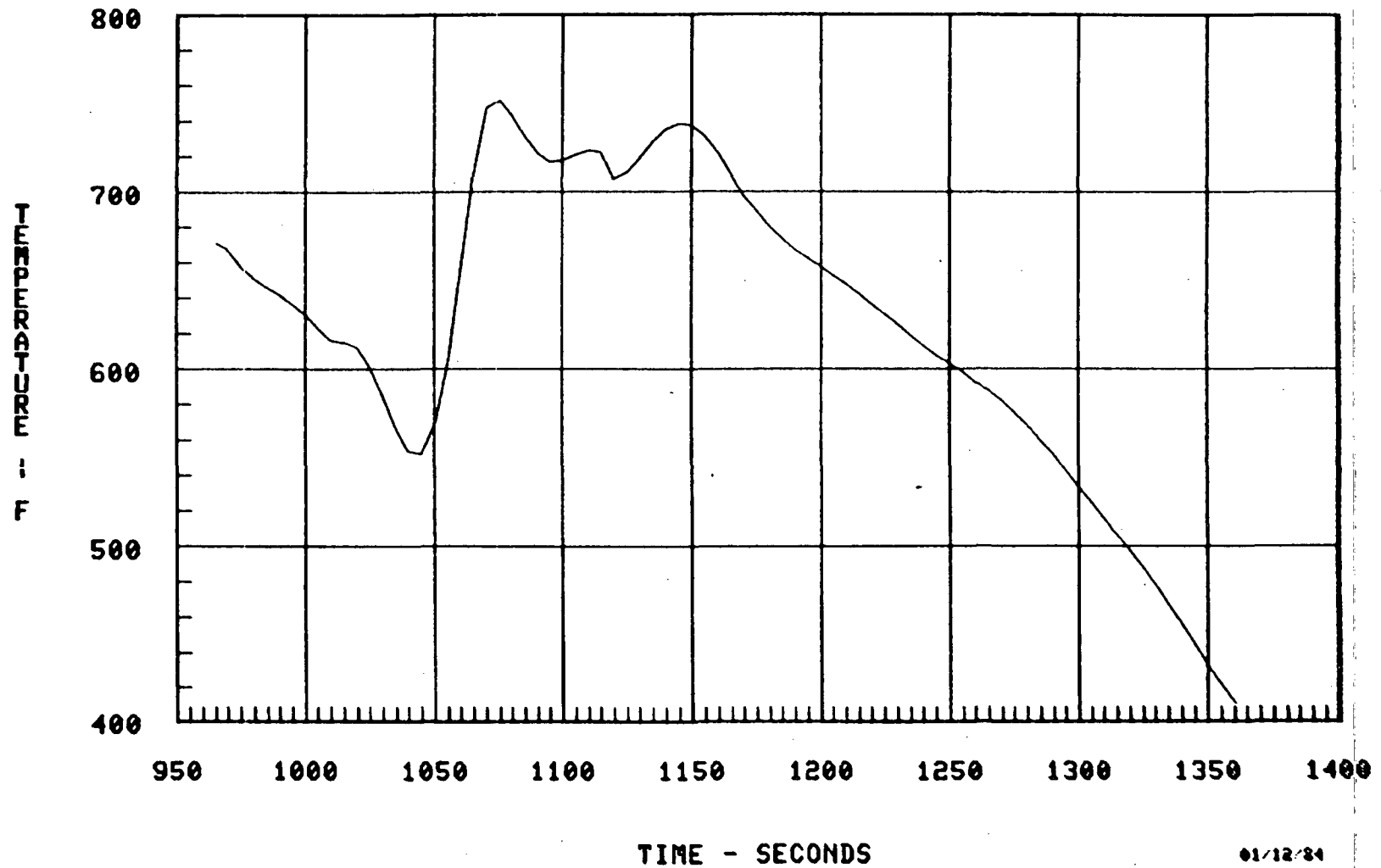
TIME - SECONDS

01/11/84



STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

U07T9912A

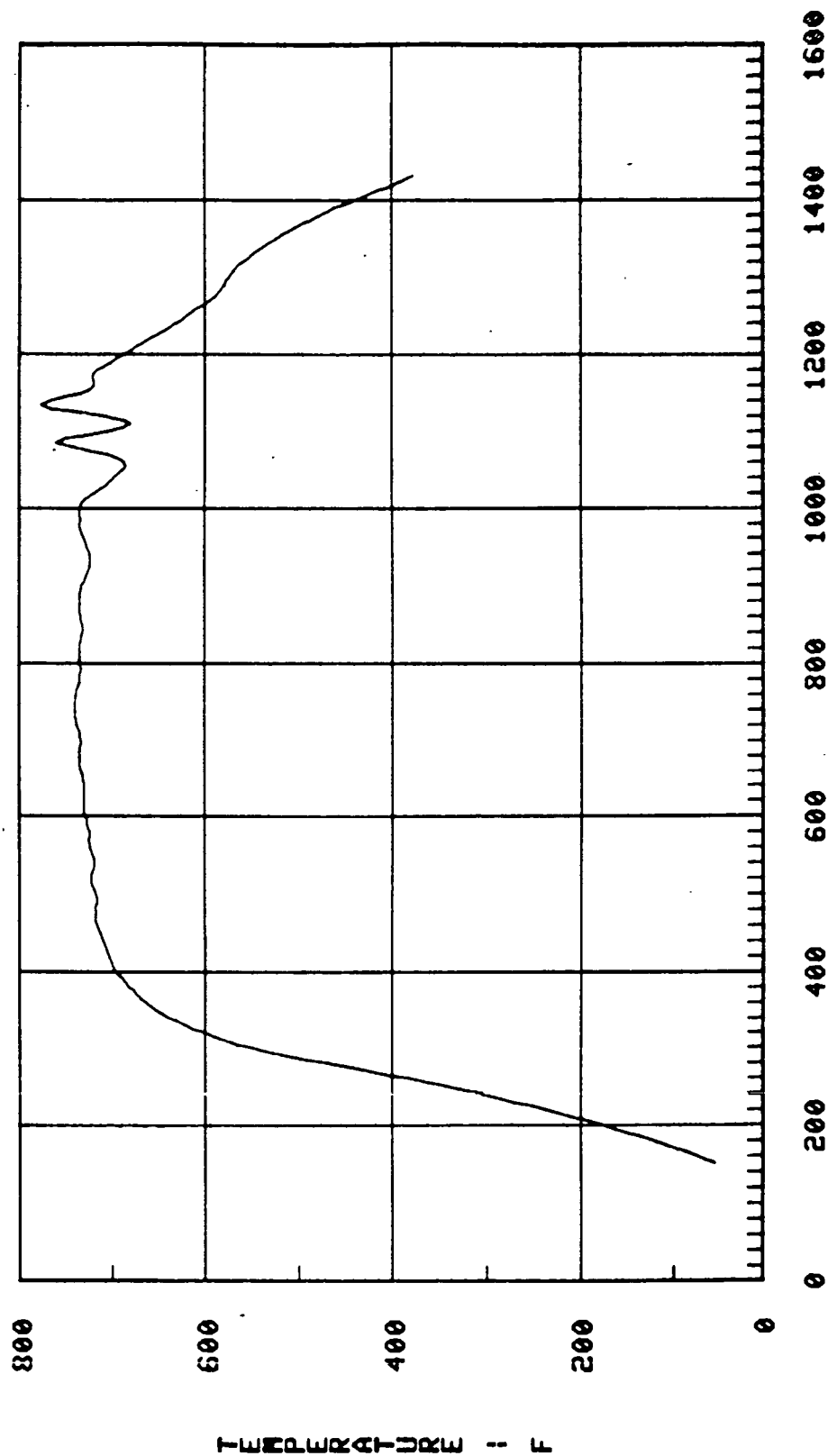


01/12/84

B-424

STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.40) Z=440

U07T9912A



TIME - SECONDS

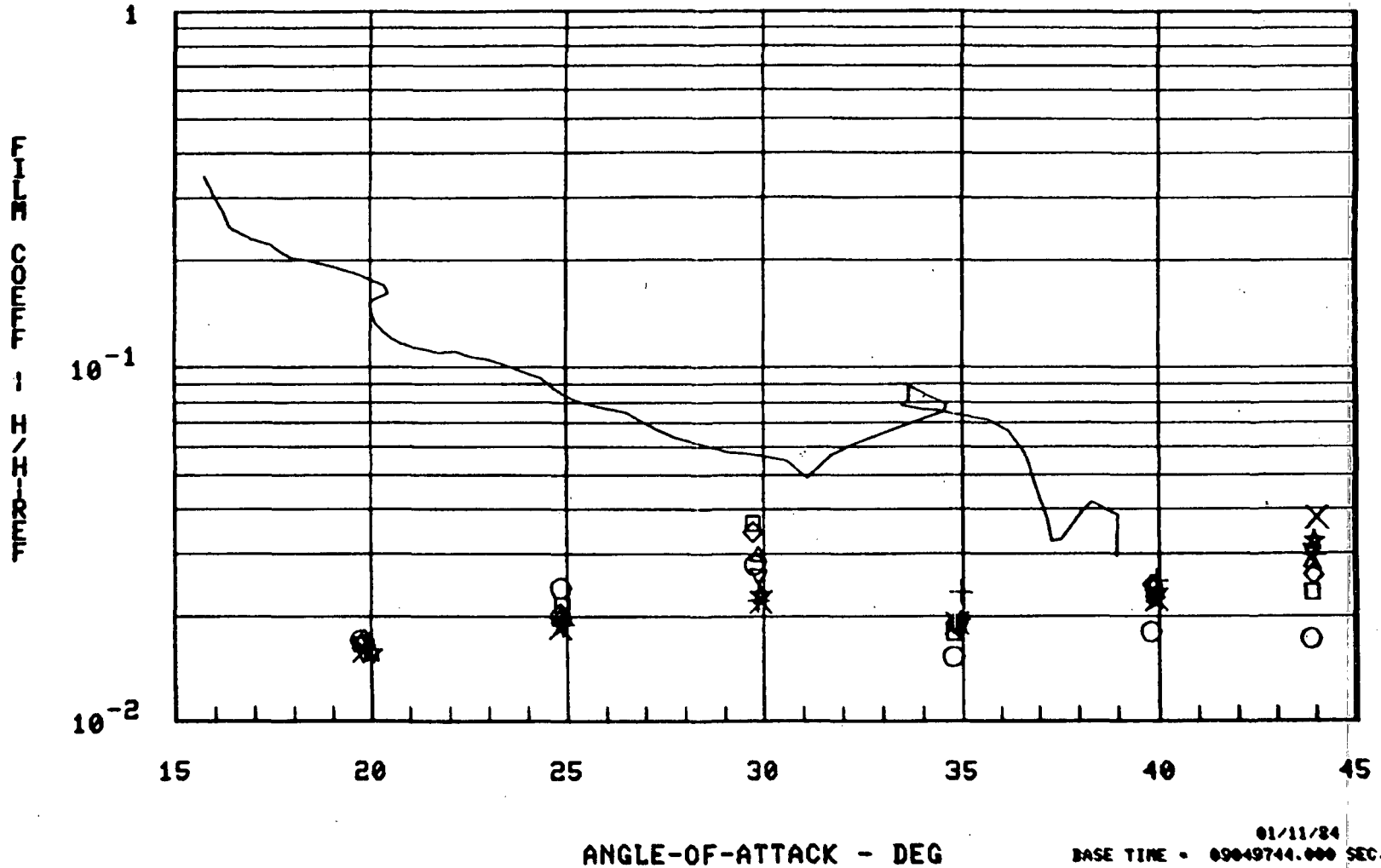
01/12/84

# STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9924A/H-REF 1065-1500 SEC



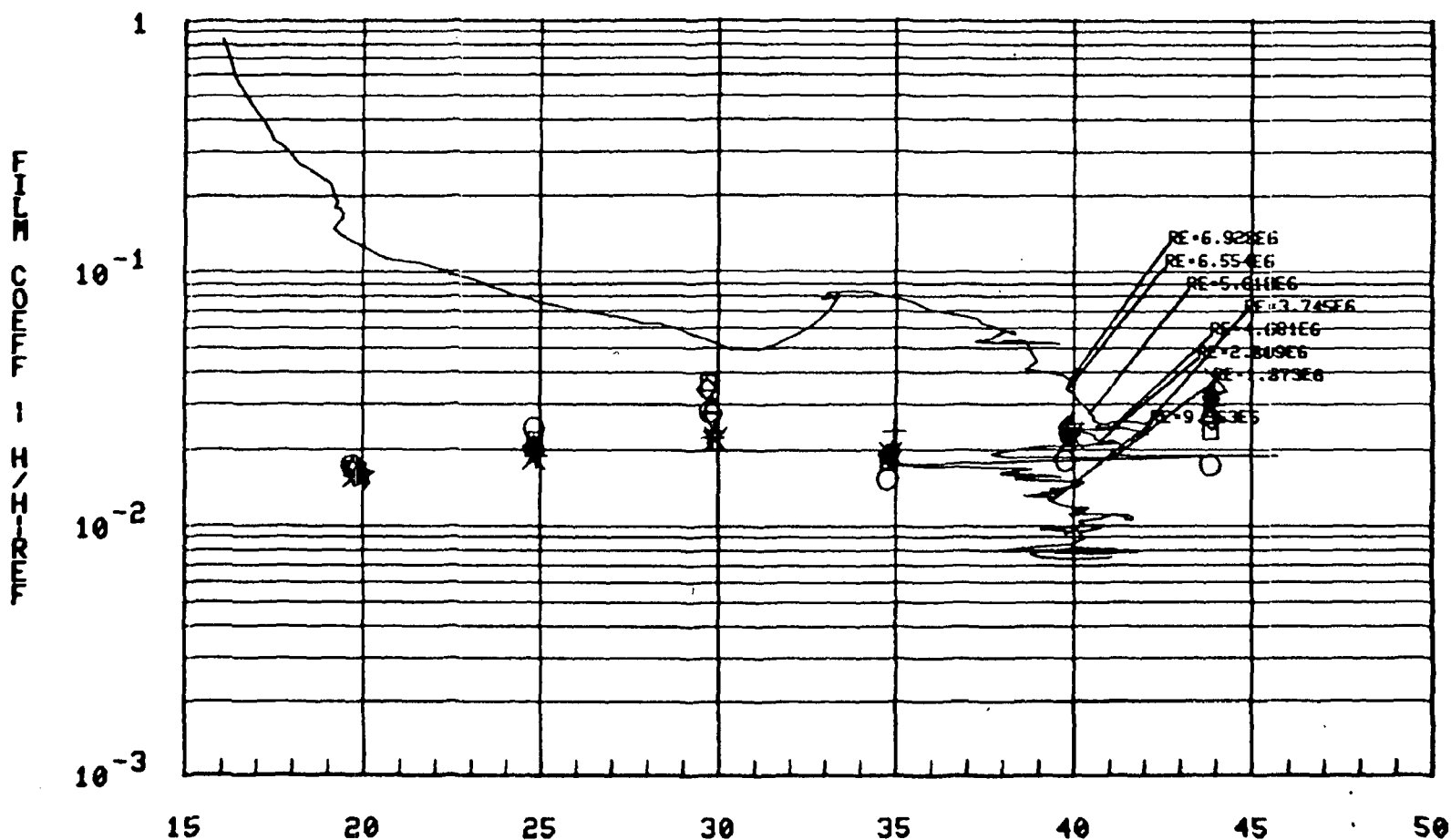
B-426

# STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

□  
○  
△  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9924A/H-REF 200-1530 SEC



B-427

ANGLE-OF-ATTACK - DEG

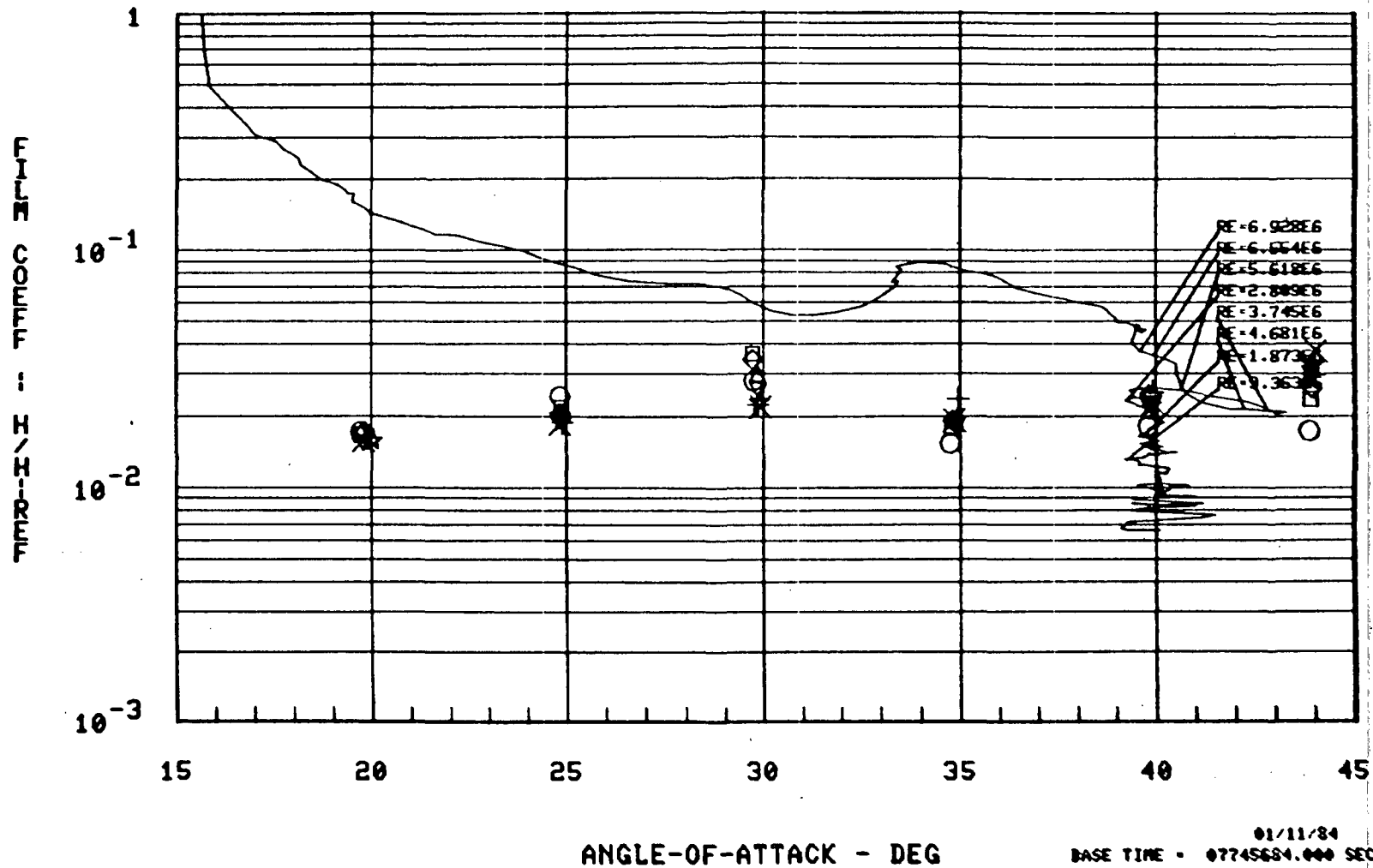
01/11/84  
 BASE TIME = 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

○◇△★+X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9924A/H-REF 200-1440 SEC



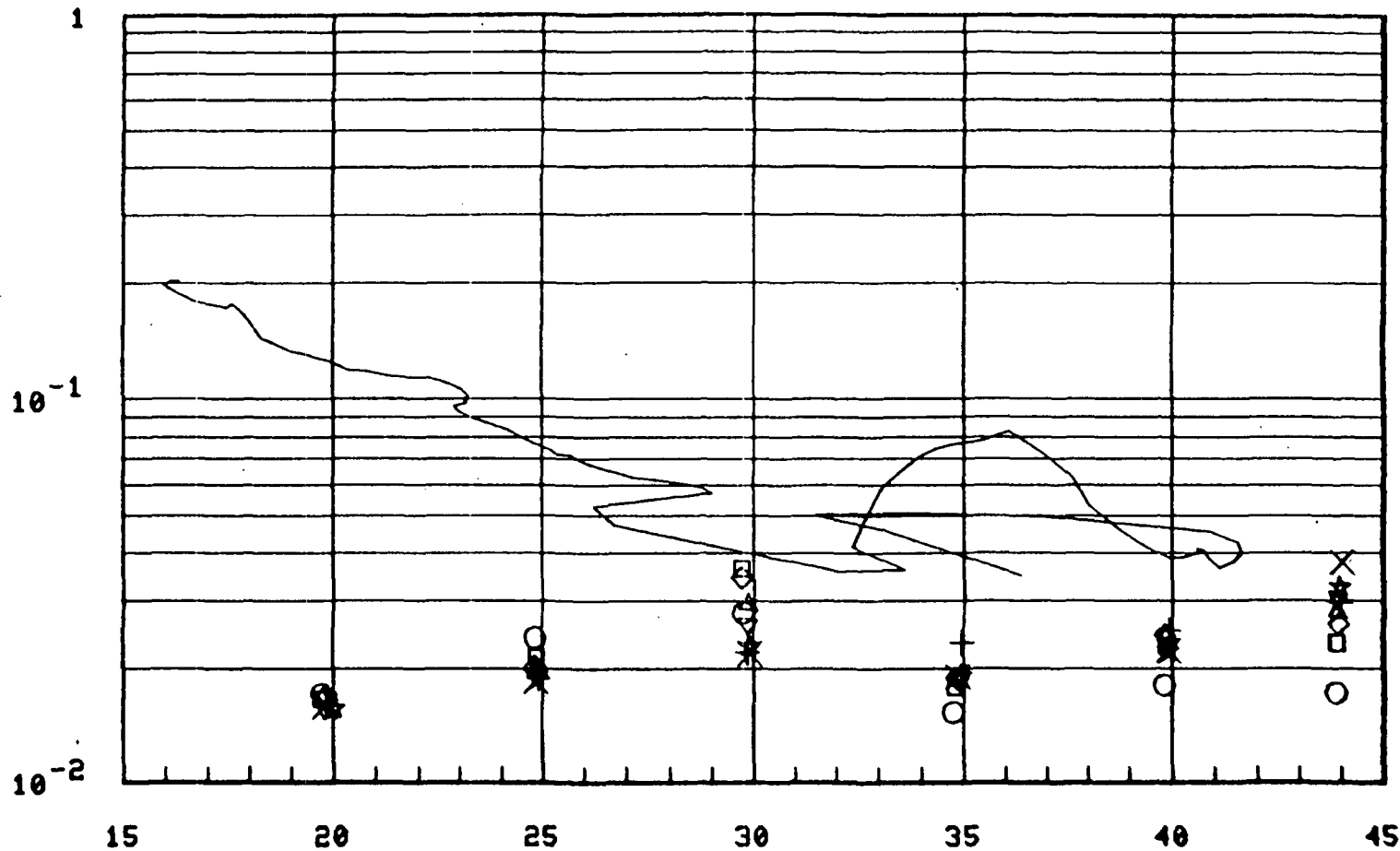
# STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE • 0.5 E06  
 OH74 0.0175 SCALE RE • 1.0 E06  
 OH74 0.0175 SCALE RE • 1.5 E06  
 OH74 0.0175 SCALE RE • 2.0 E06  
 OH74 0.0175 SCALE RE • 2.5 E06  
 OH74 0.0175 SCALE RE • 3.0 E06  
 OH74 0.0175 SCALE RE • 3.5 E06  
 OH74 0.0175 SCALE RE • 3.7 E06

U07T9924A/H-REF 965-1360 SEC

LINE COUNT - H/H-COUNT



ANGLE-OF-ATTACK - DEG

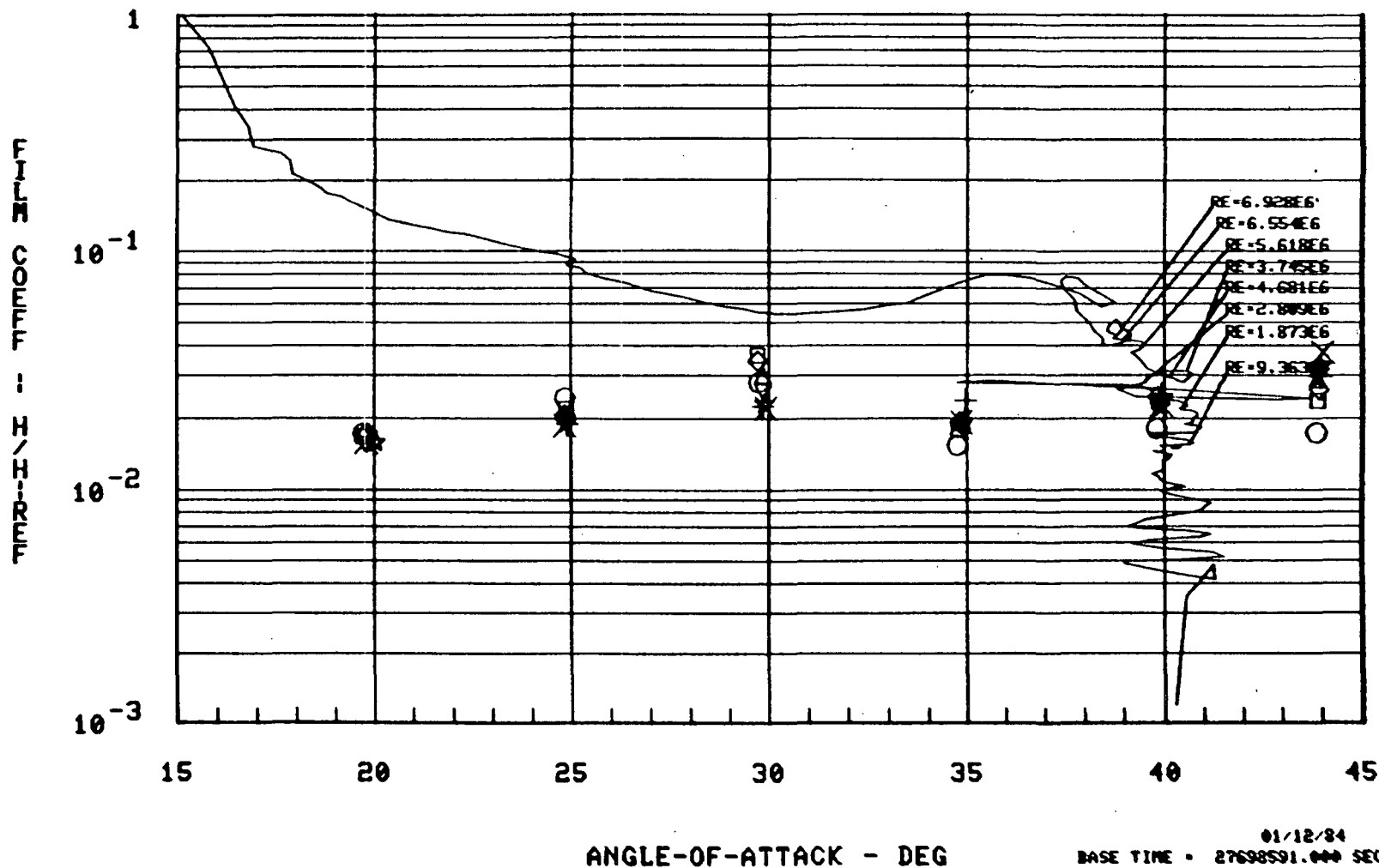
01/12/84  
 BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

○  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9924A/H-REF 150-1430 SEC

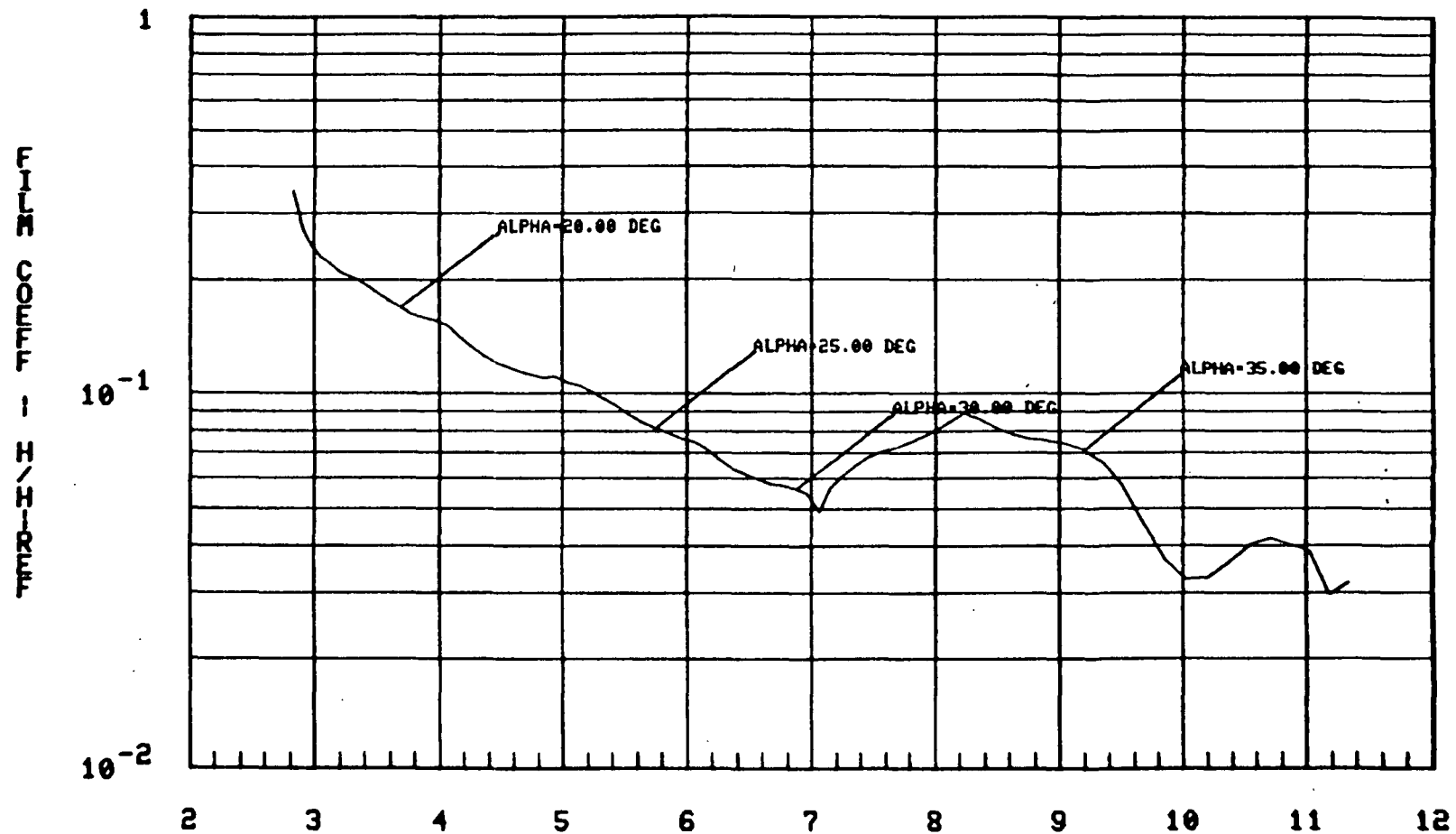


01/12/84

BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A/H-REF 1065-1500 SEC



MACH NUMBER

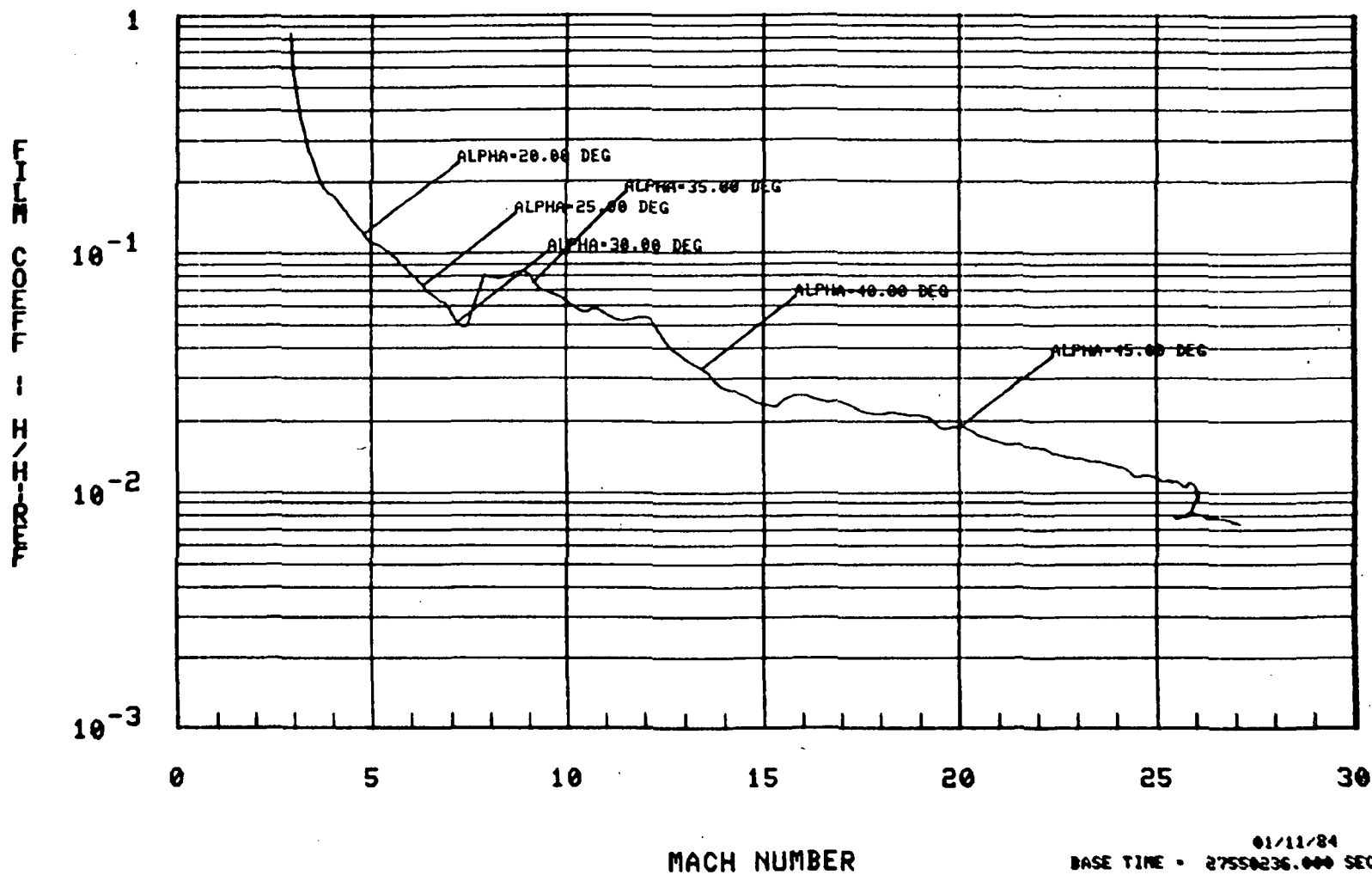
01/11/84  
BASE TIME = 09049744.000 SEC.

B-431



# STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

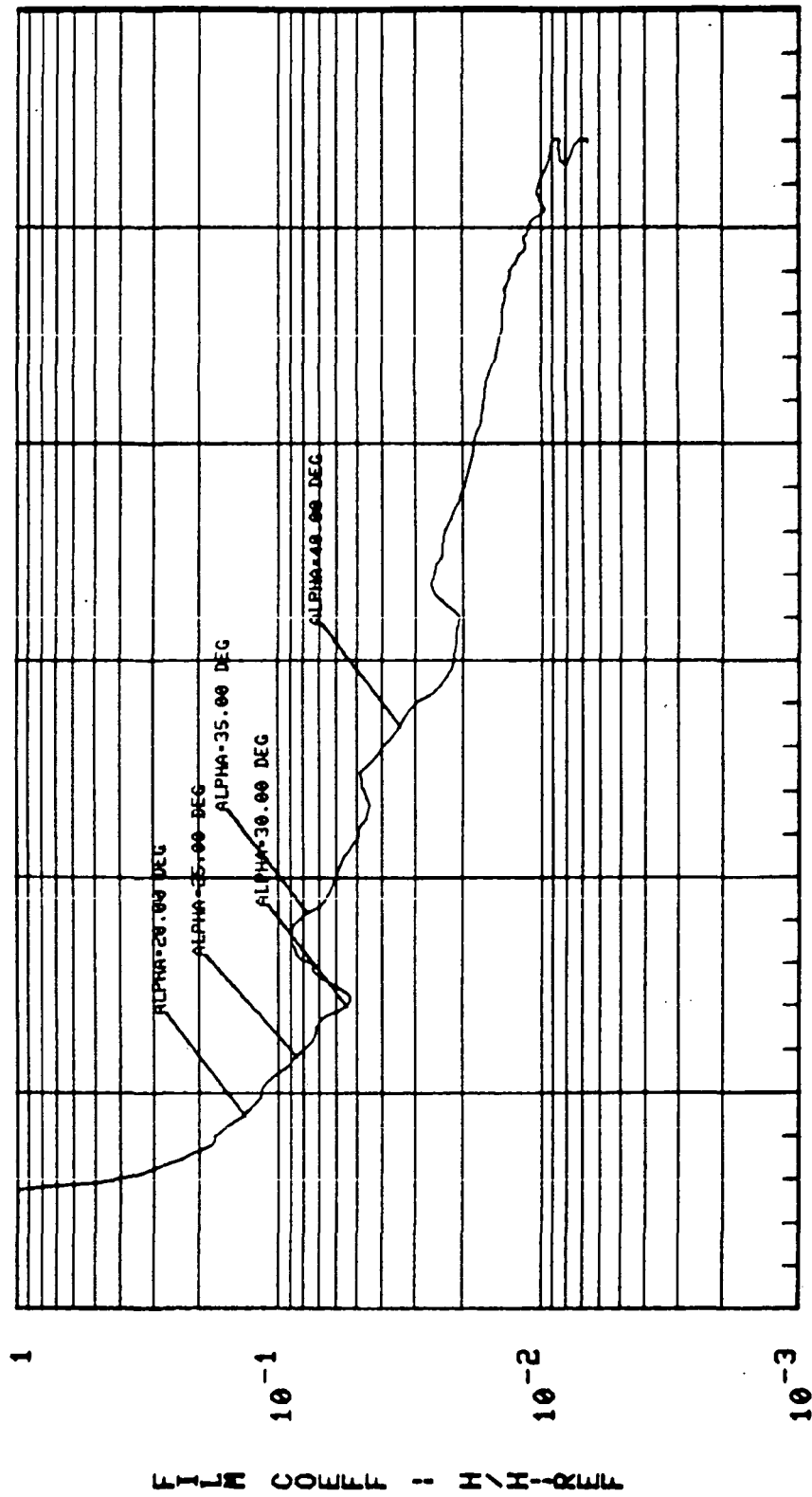
U07T9924A/H-REF 200-1530 SEC



B-432

# STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A/H-REF 200-1440 SEC

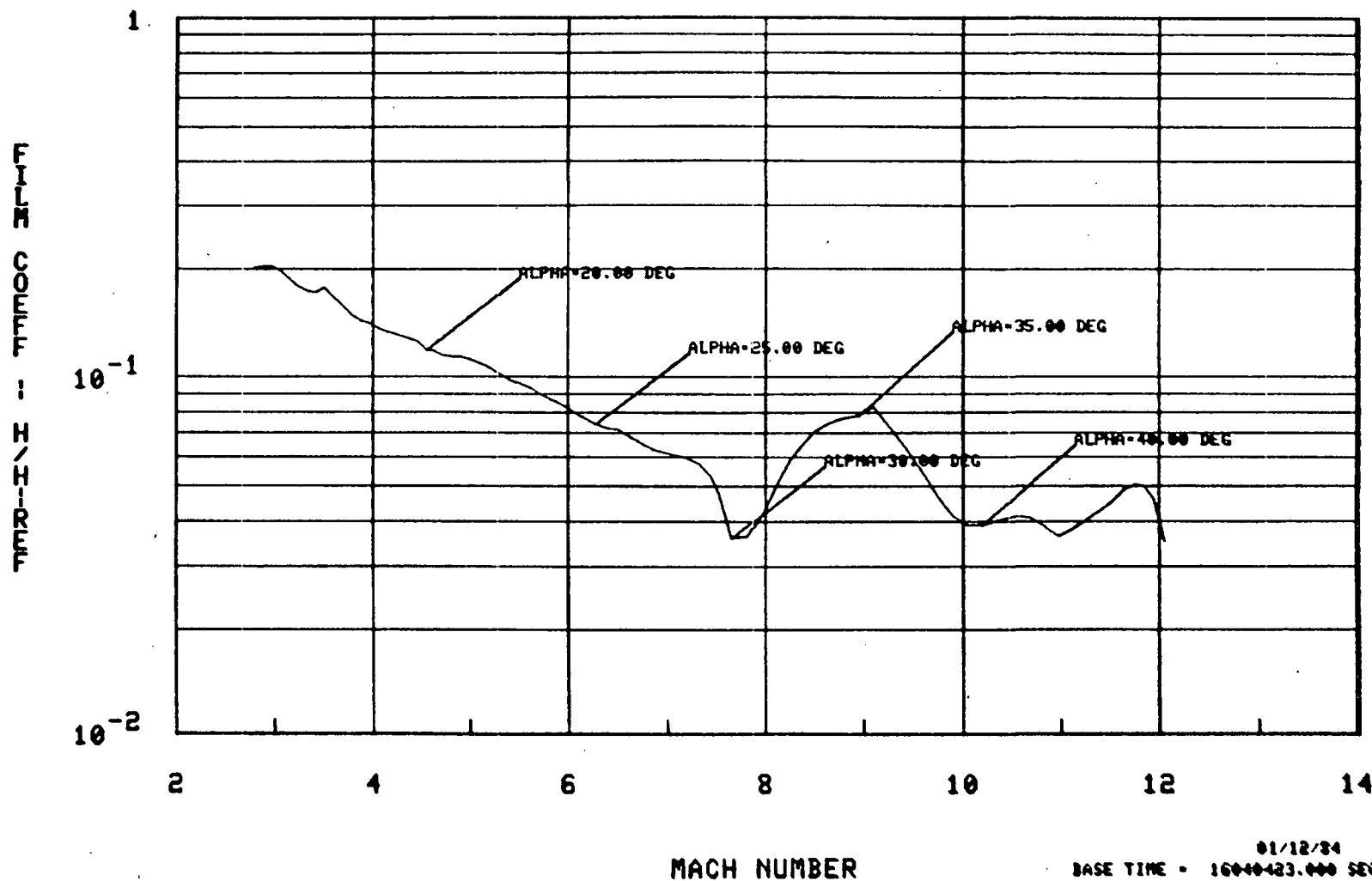


01/11/84  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.50$ ) $Z=440$

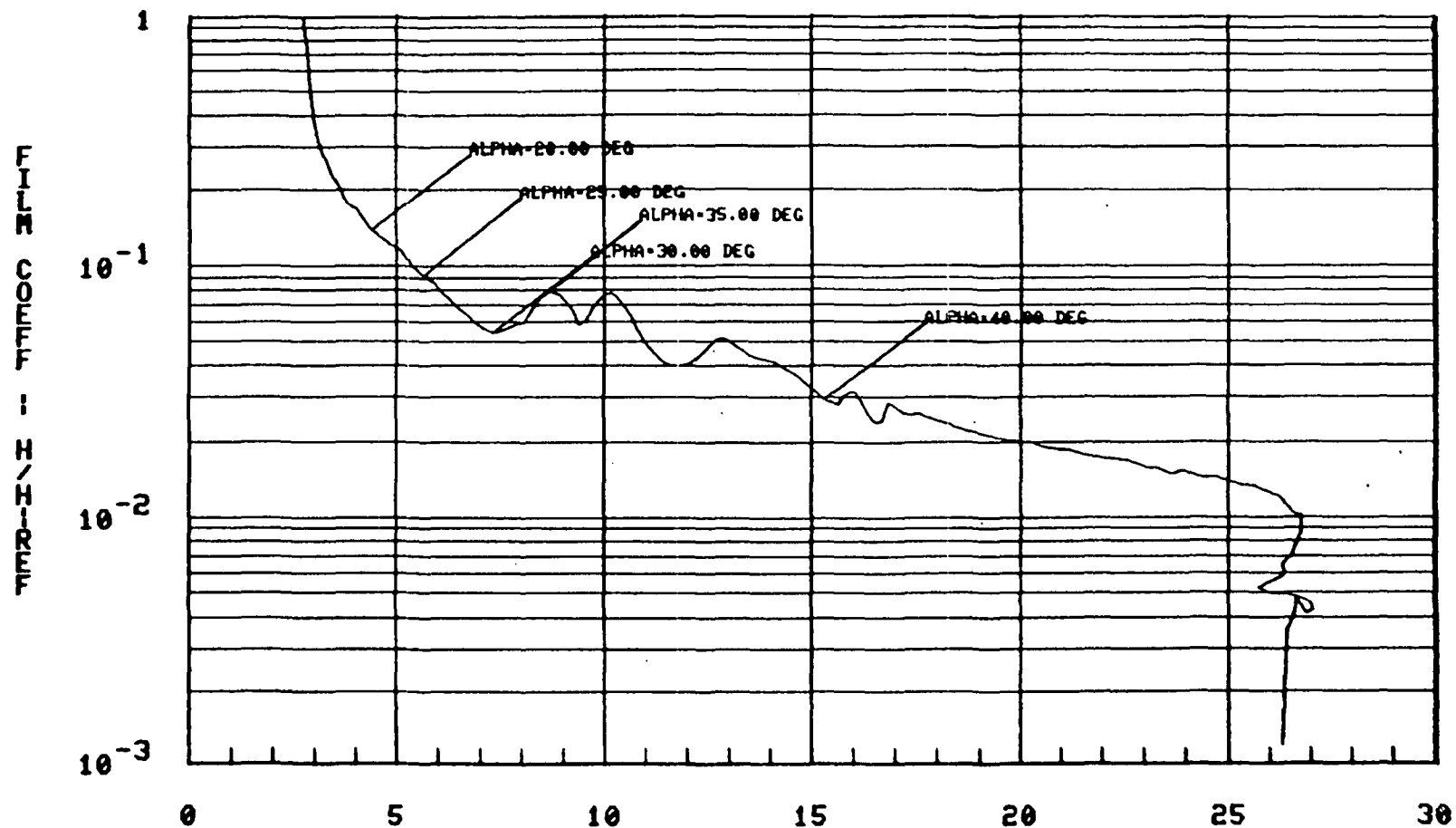
U07T9924A/H-REF 965-1360 SEC



B-434

STS-5 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.50$ )  $Z=440$

U07T9924A/H-REF 150-1430 SEC



B-435

MACH NUMBER

01/18/84  
BASE TIME = 27698591.000 SEC.

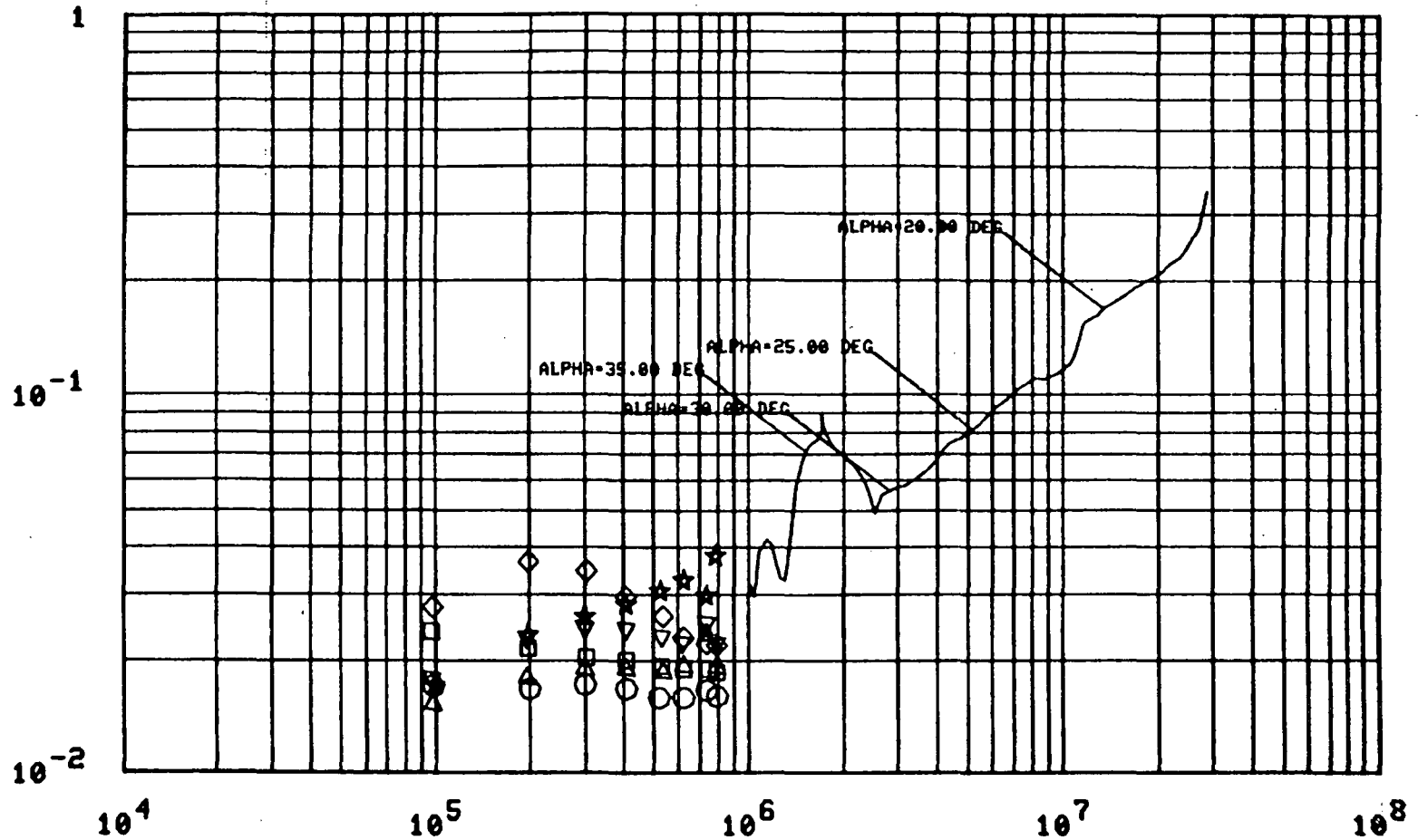
# STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9924A/H-REF 1065-1500 SEC

LINE COUNT - H-H-RULL



B-436

REYNOLDS NUMBER (NS)

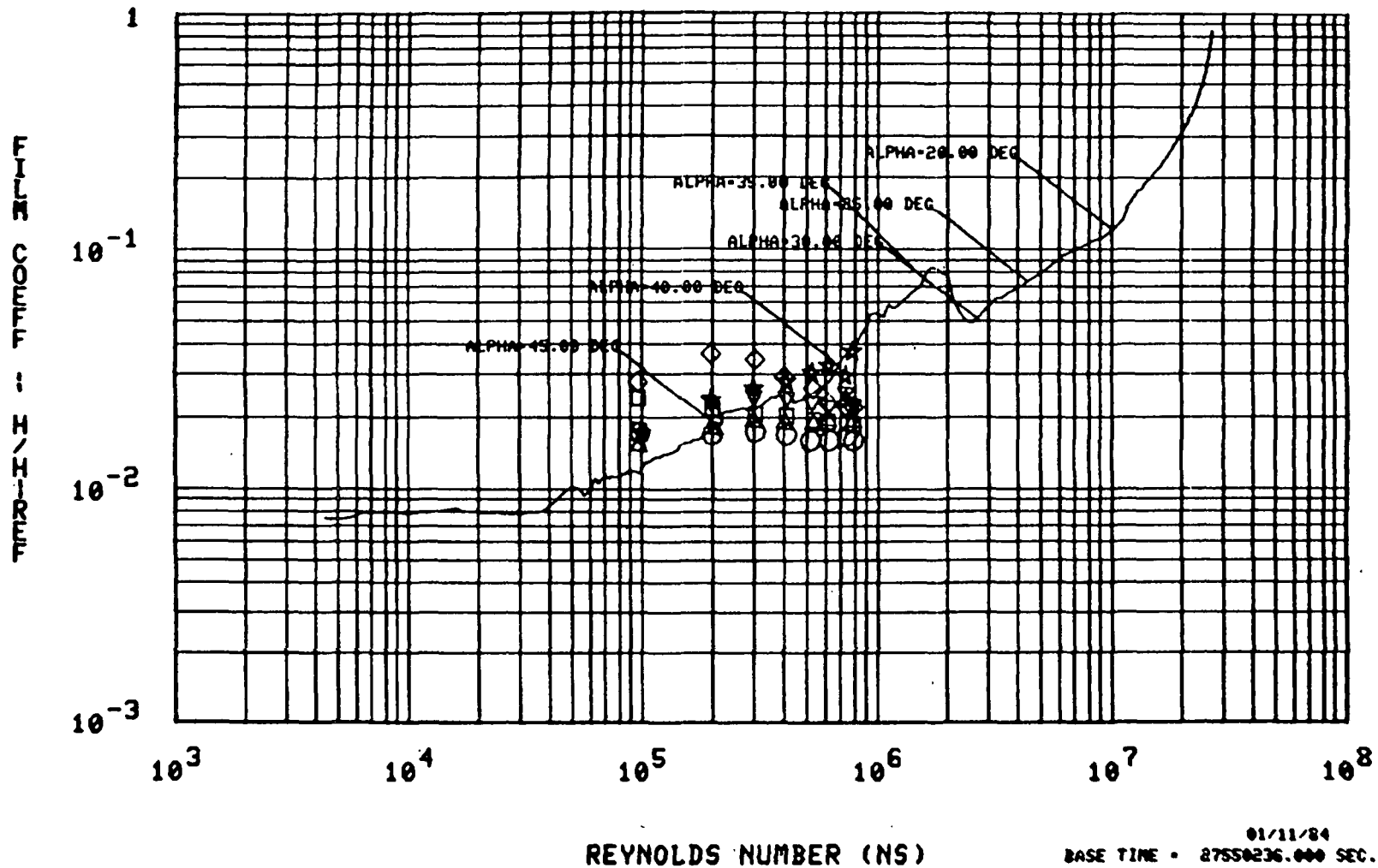
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE PLB DOOR $X/L=0.50$ ) $Z=440$

○  
◇  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9924A/H-REF 200-1530 SEC

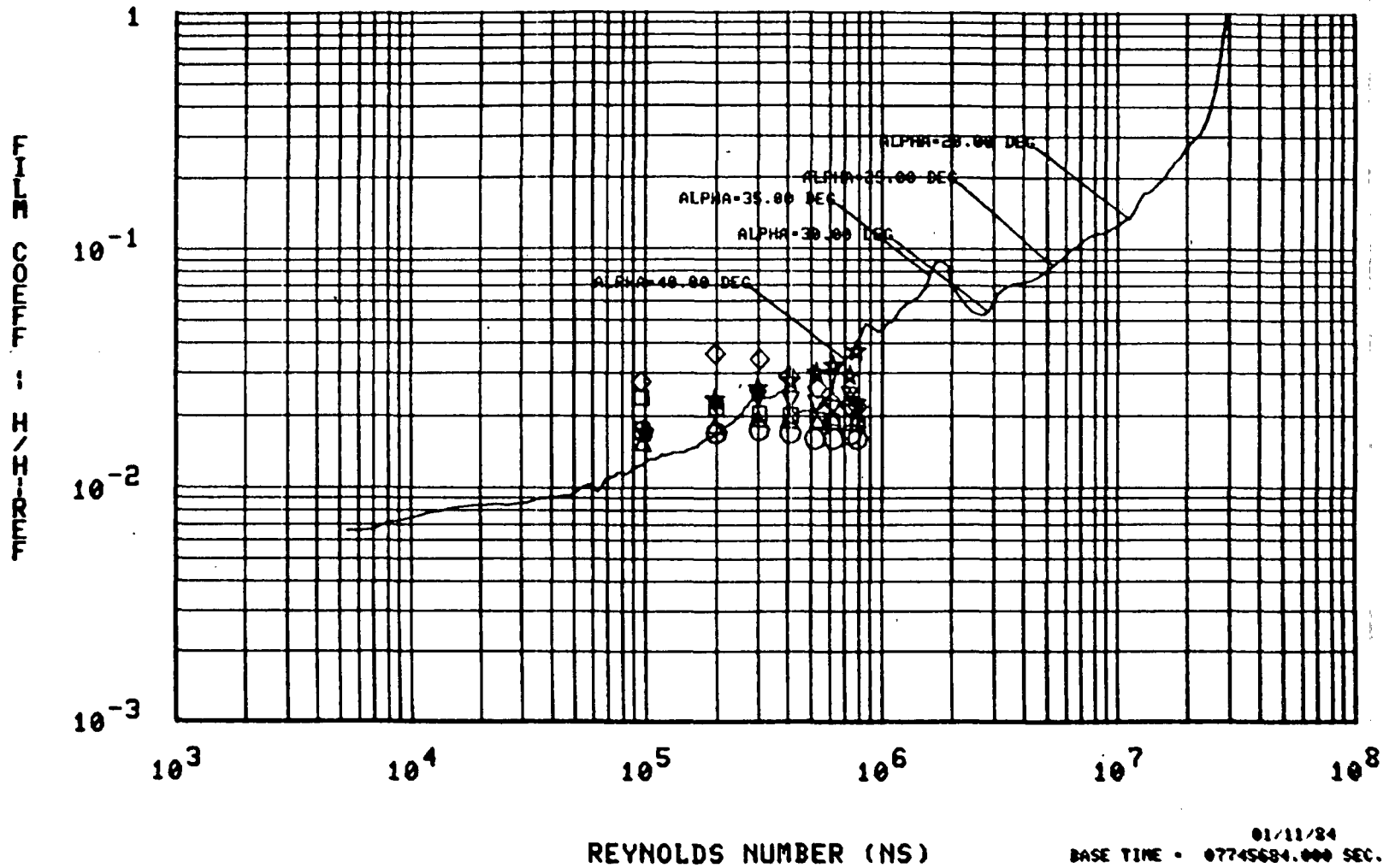


# STS-3 (107 FT LENGTH SIDE PLB DOOR $X/L=0.50$ ) $Z=440$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9924A/H-REF 200-1440 SEC

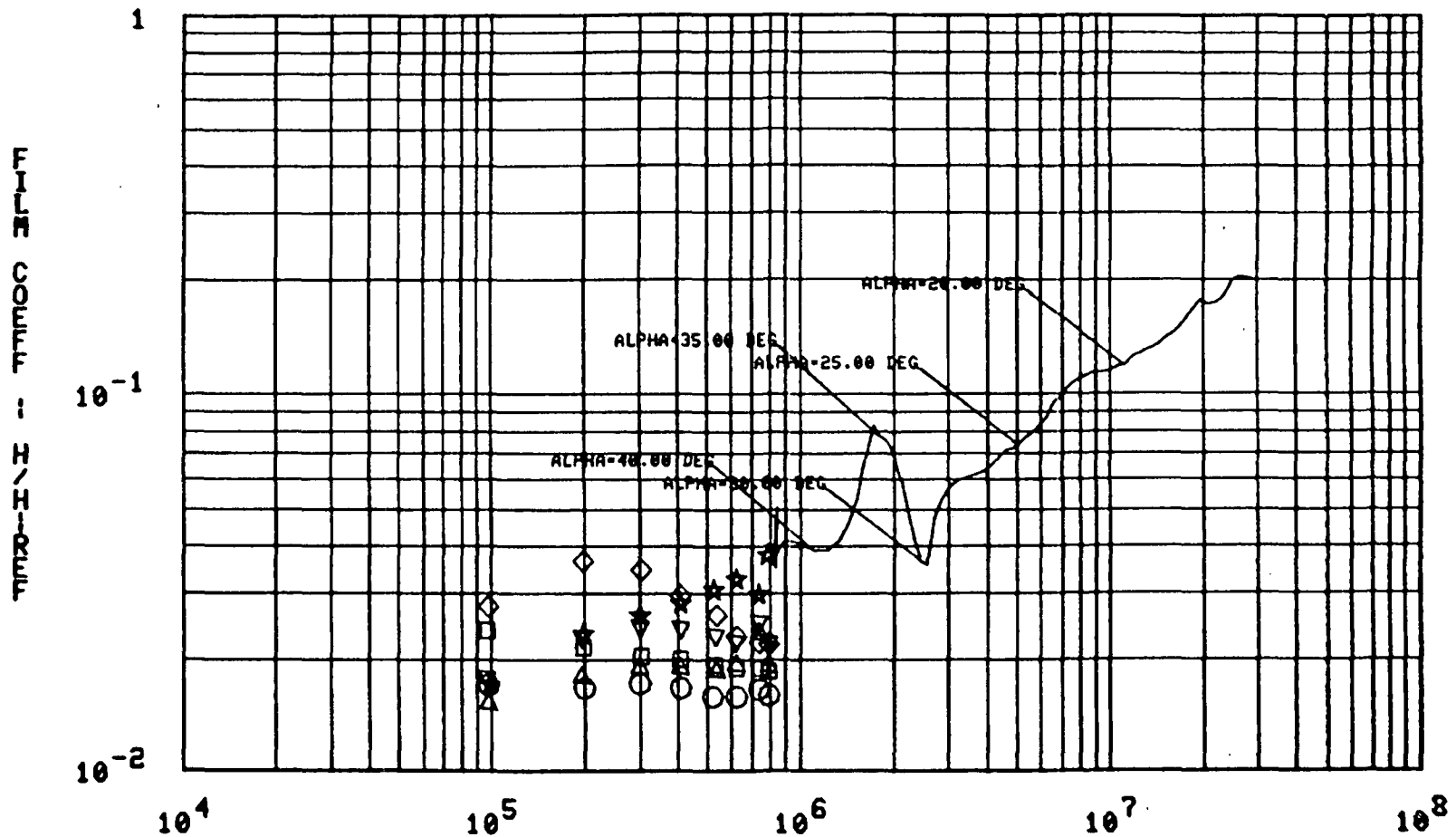


# STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

○  
◇  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9924A/H-REF 965-1360 SEC



REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 16040423.000 SEC.

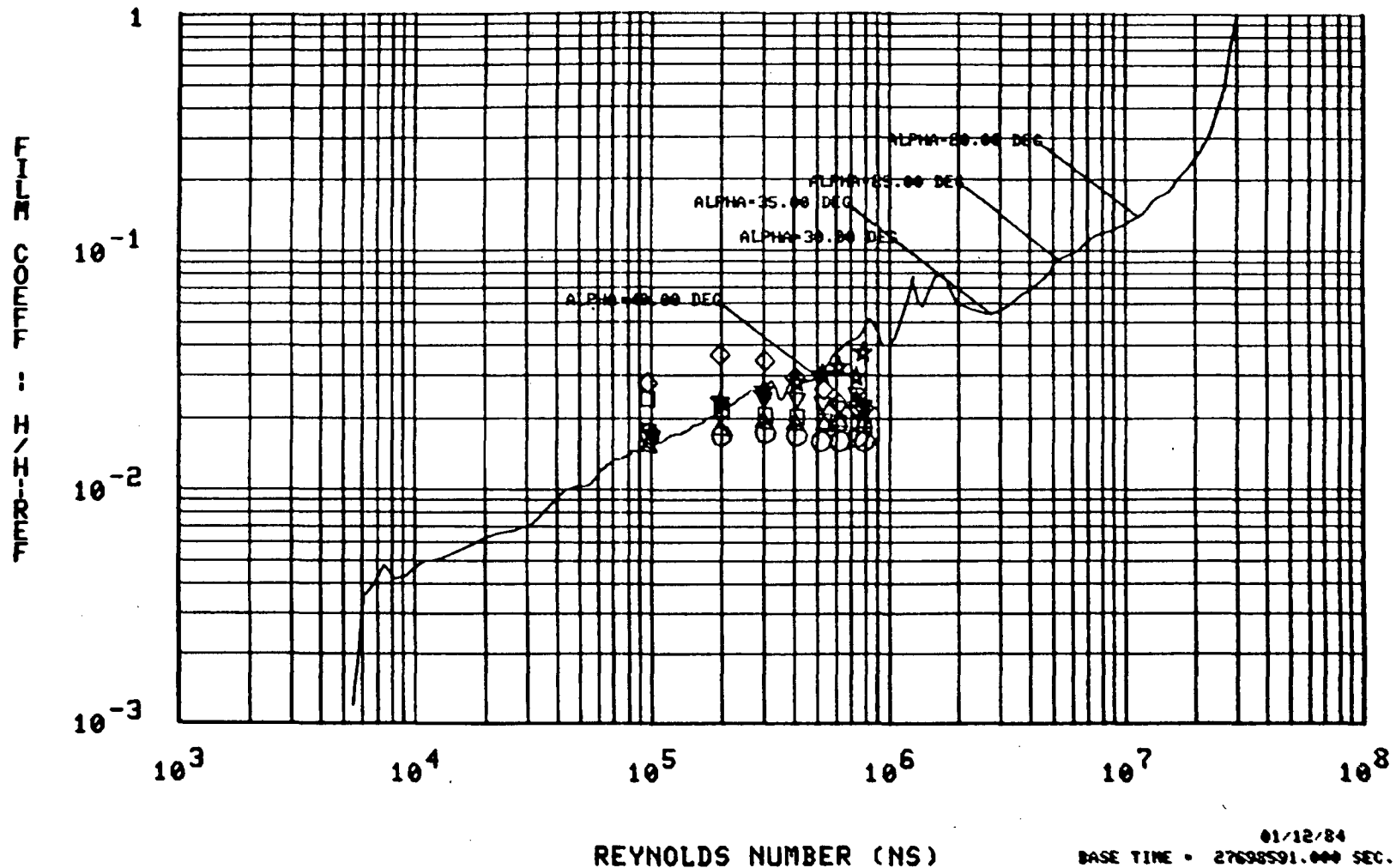


# STS-5 (107 FT LENGTH SIDE PLB DOOR $X/L=0.50$ ) $Z=440$

○  
◇  
□  
△  
▽  
★

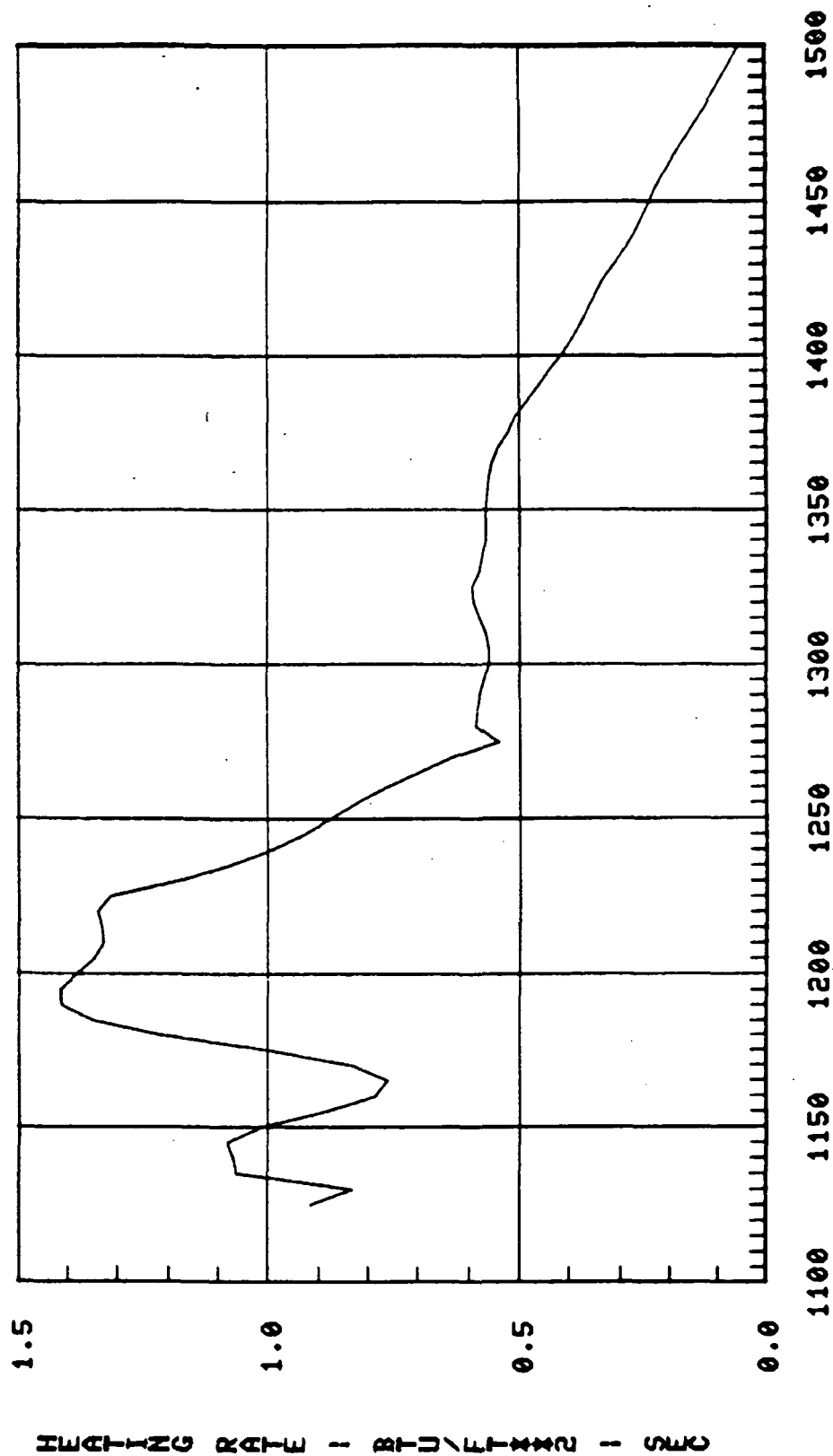
OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9924A/H-REF 150-1430 SEC



STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A

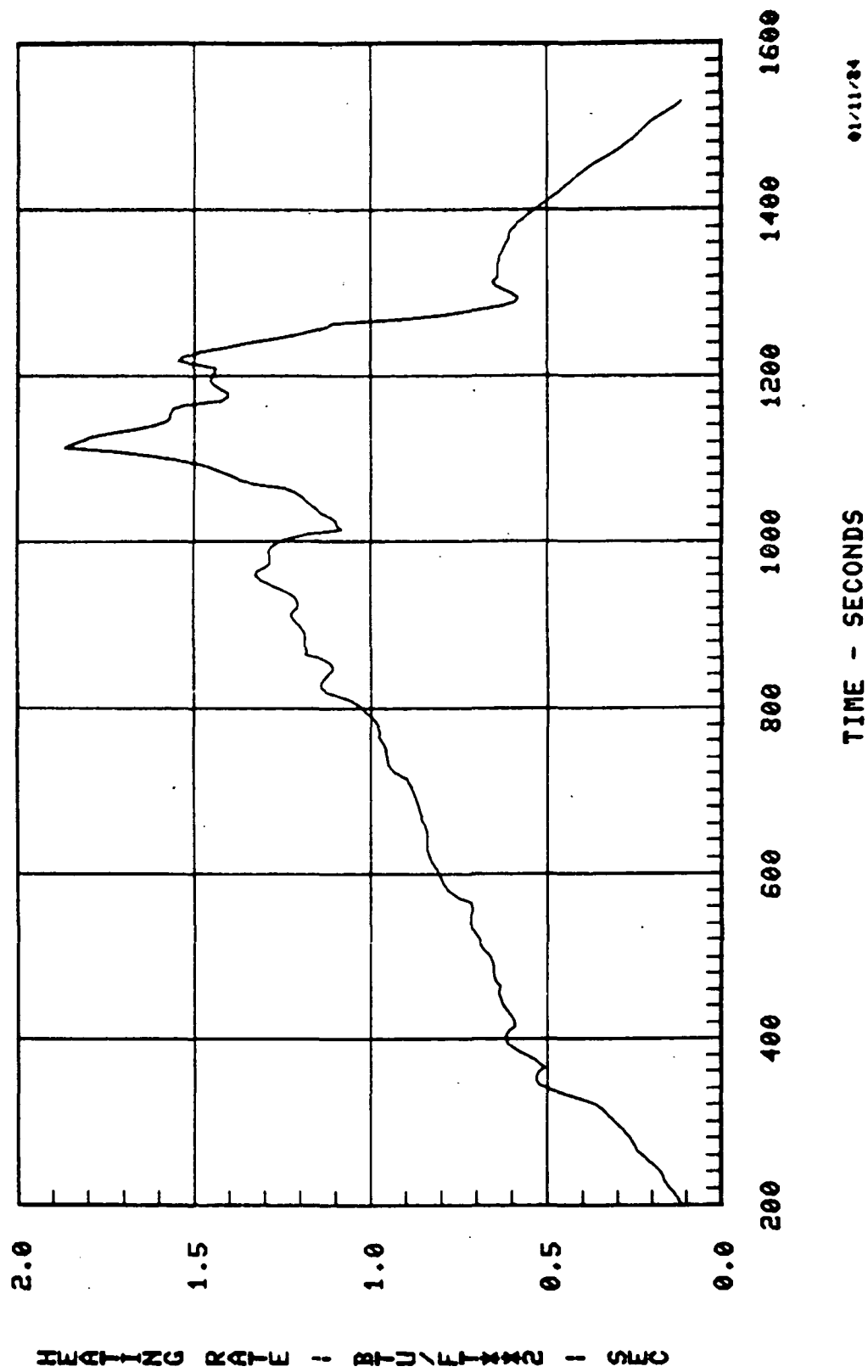


TIME - SECONDS

01/11/84

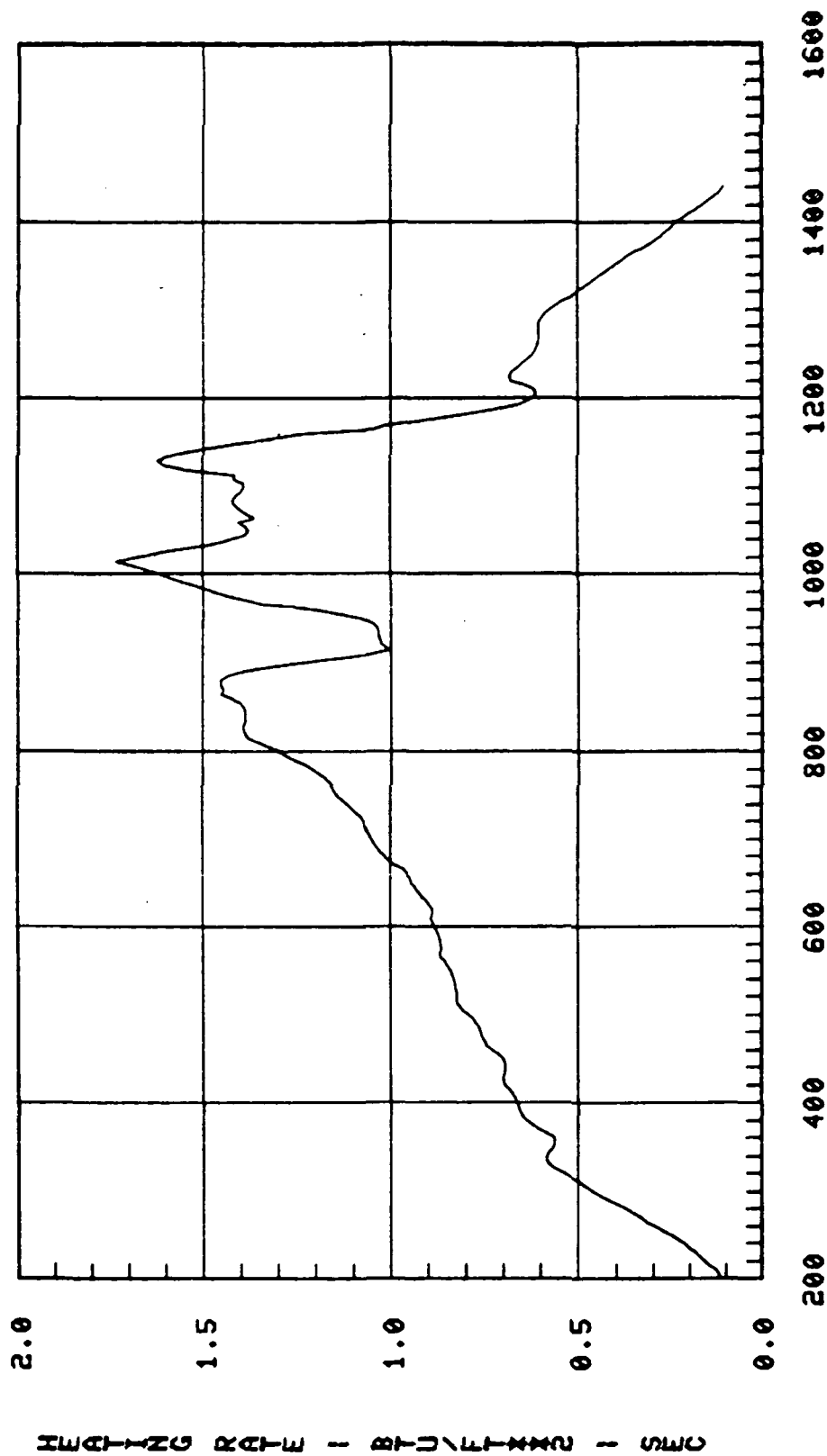
STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A



STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A

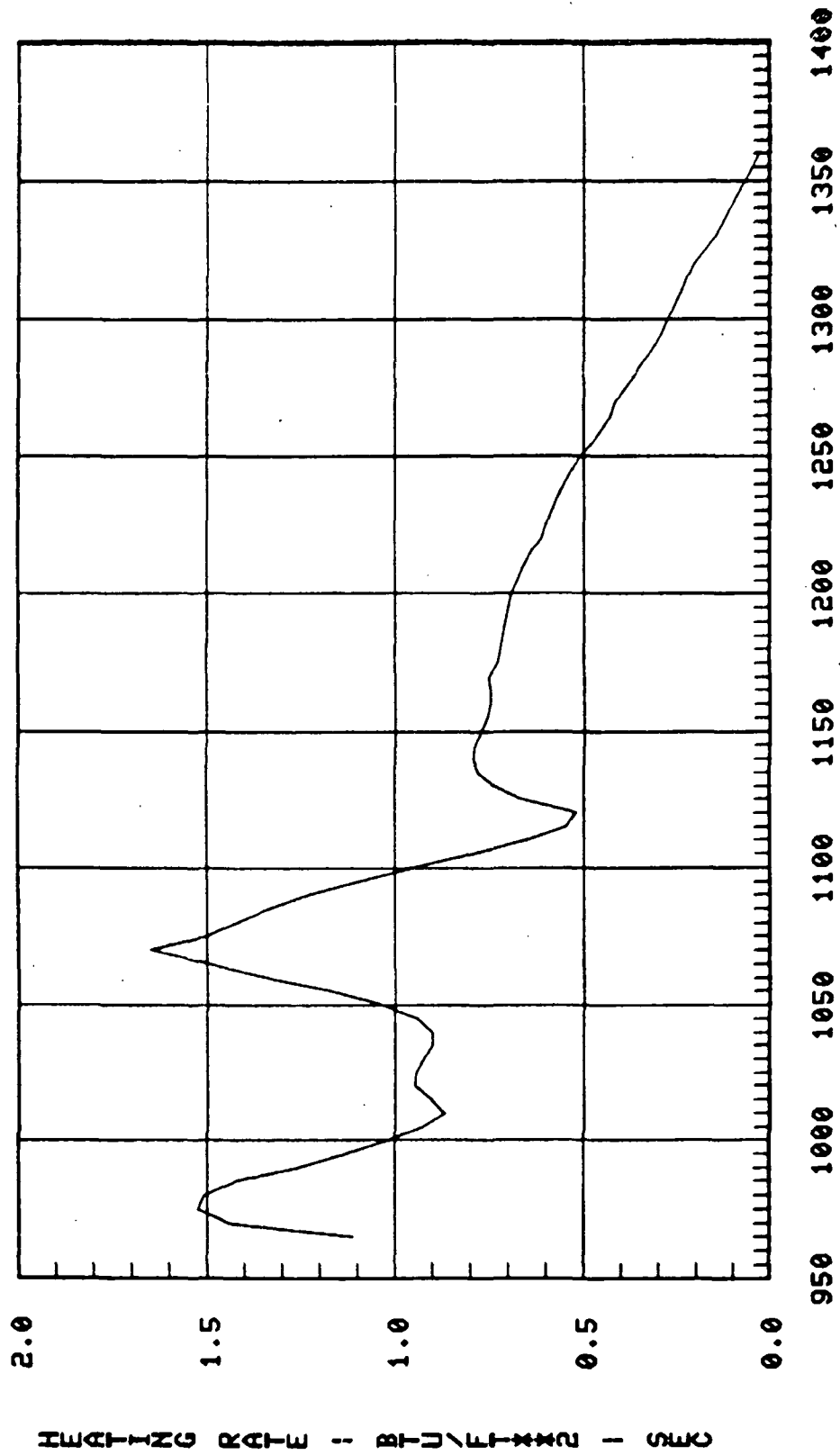


TIME - SECONDS

01/11/80

STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

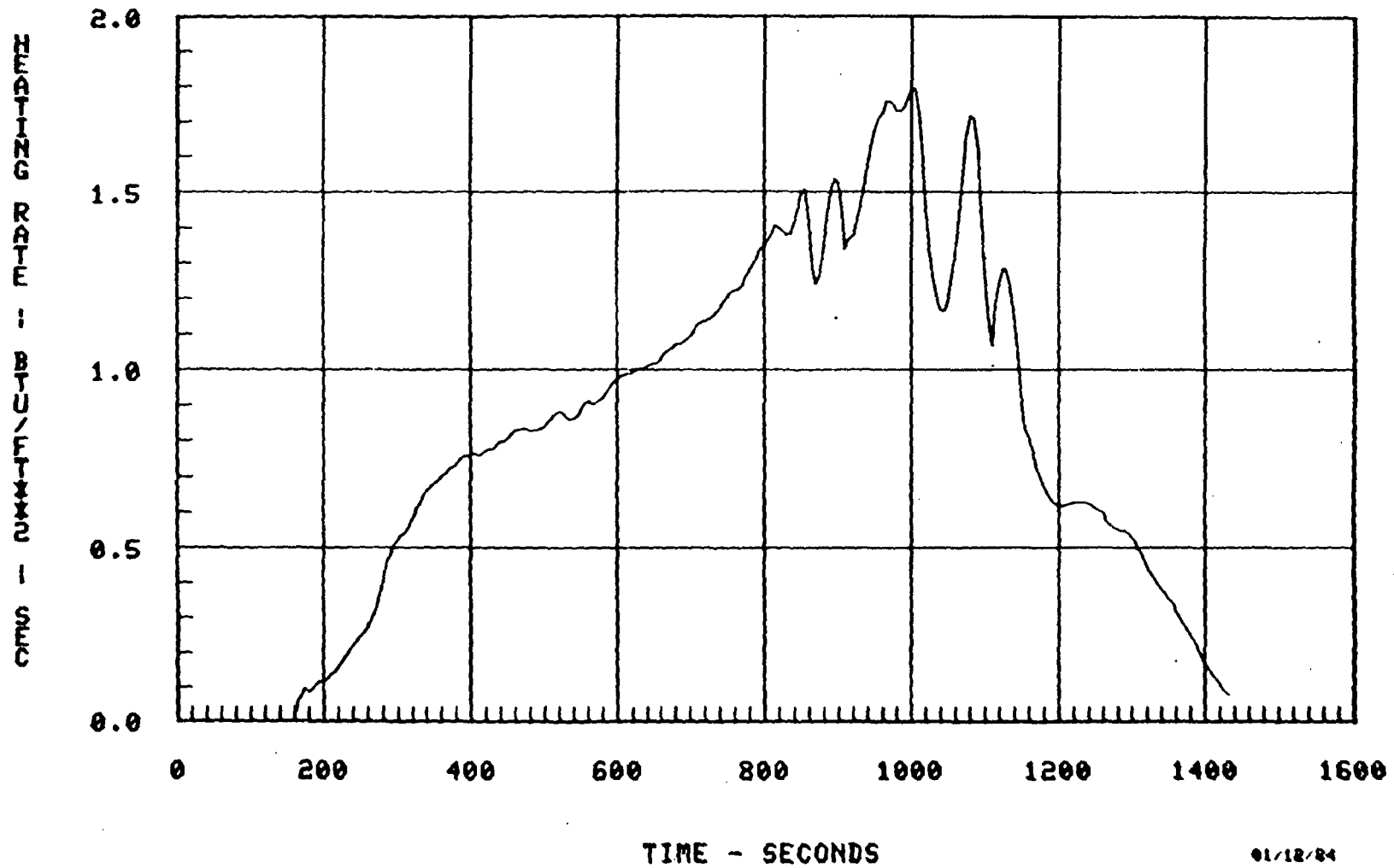
U07T9924A



01/12/84

STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

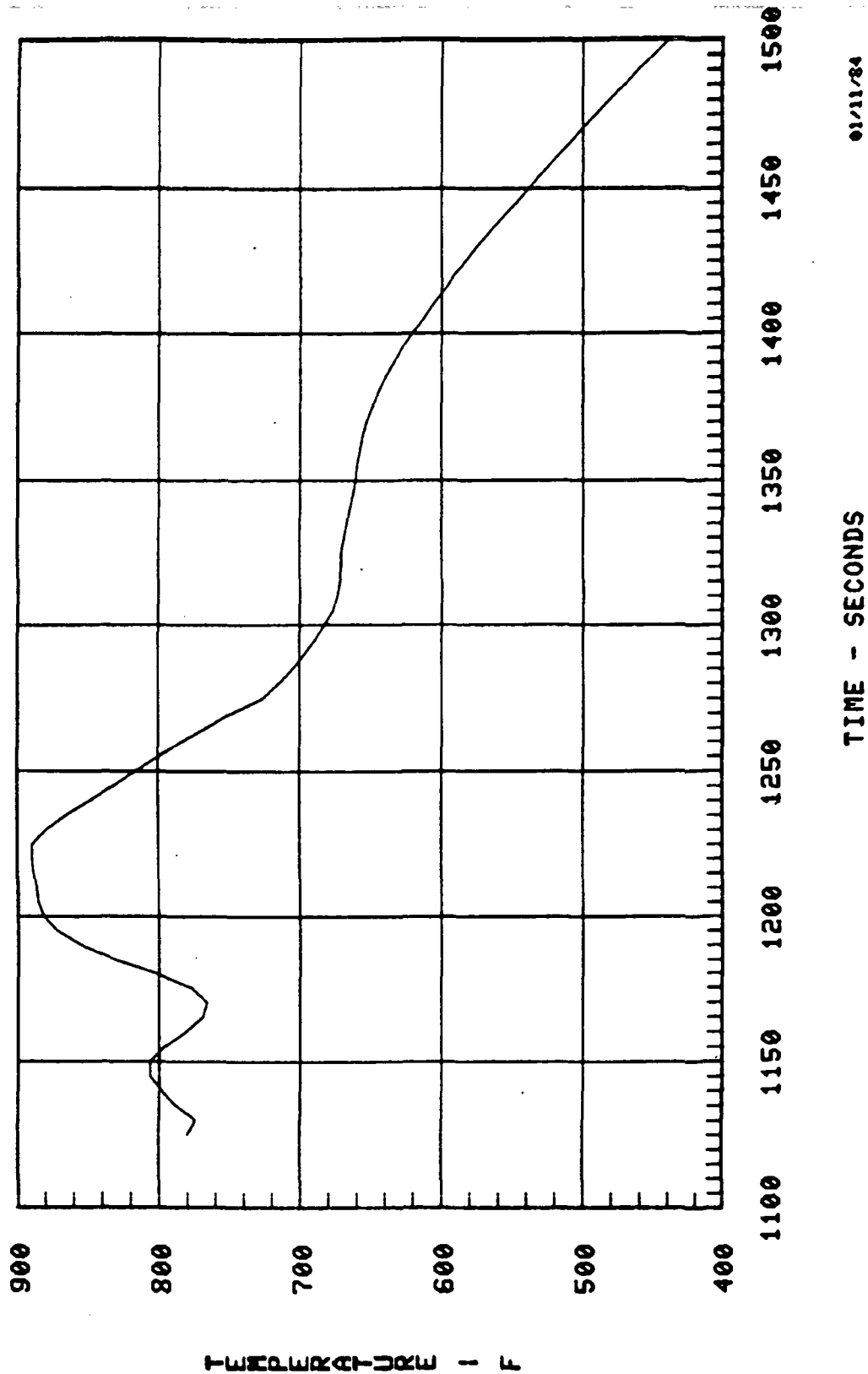
U07T9924A



B-445

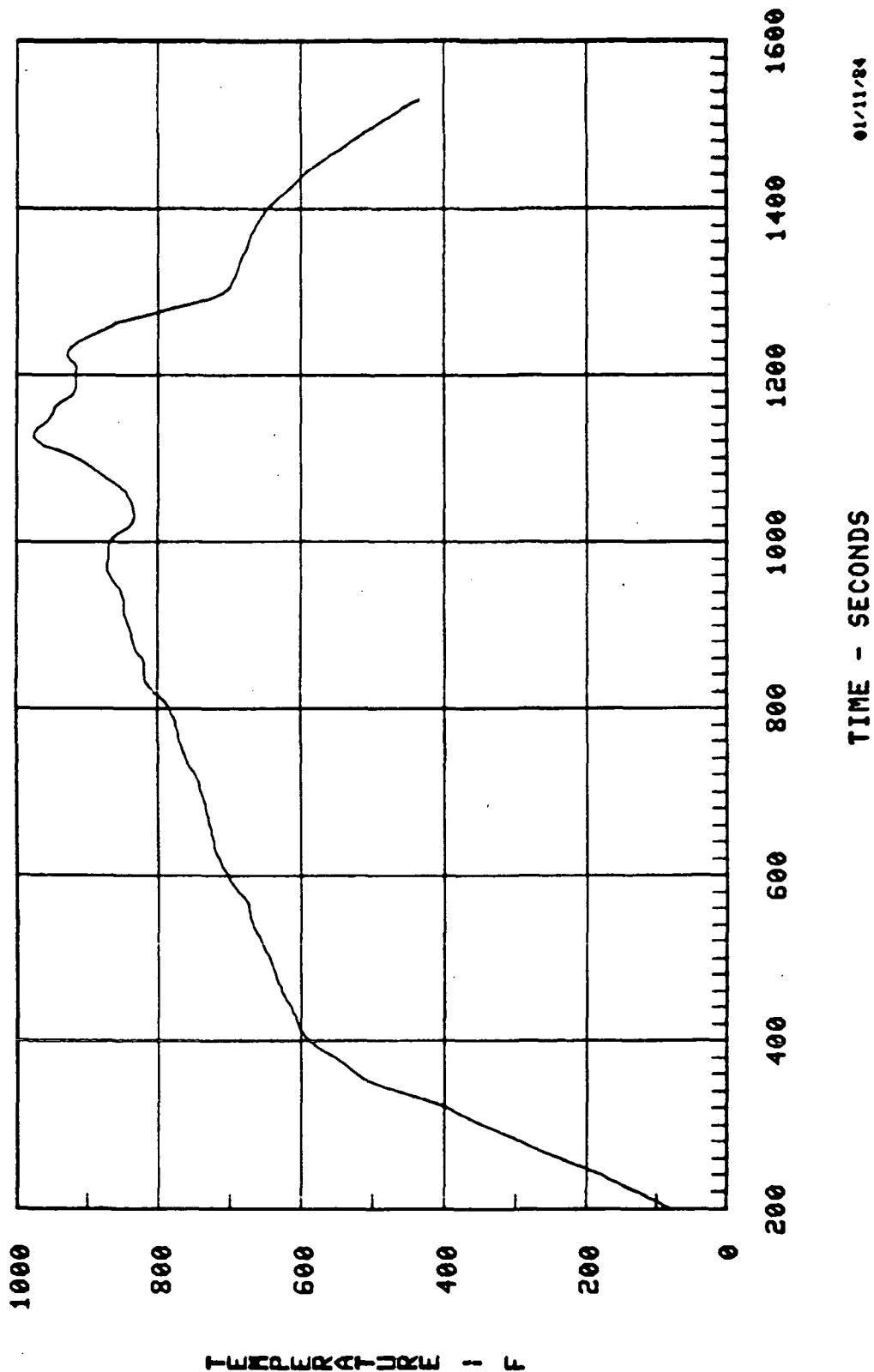
STS-1 (107 FT LENGTH SIDE PLB D00R X/L=0.50) Z=440

U07T9924A



STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A

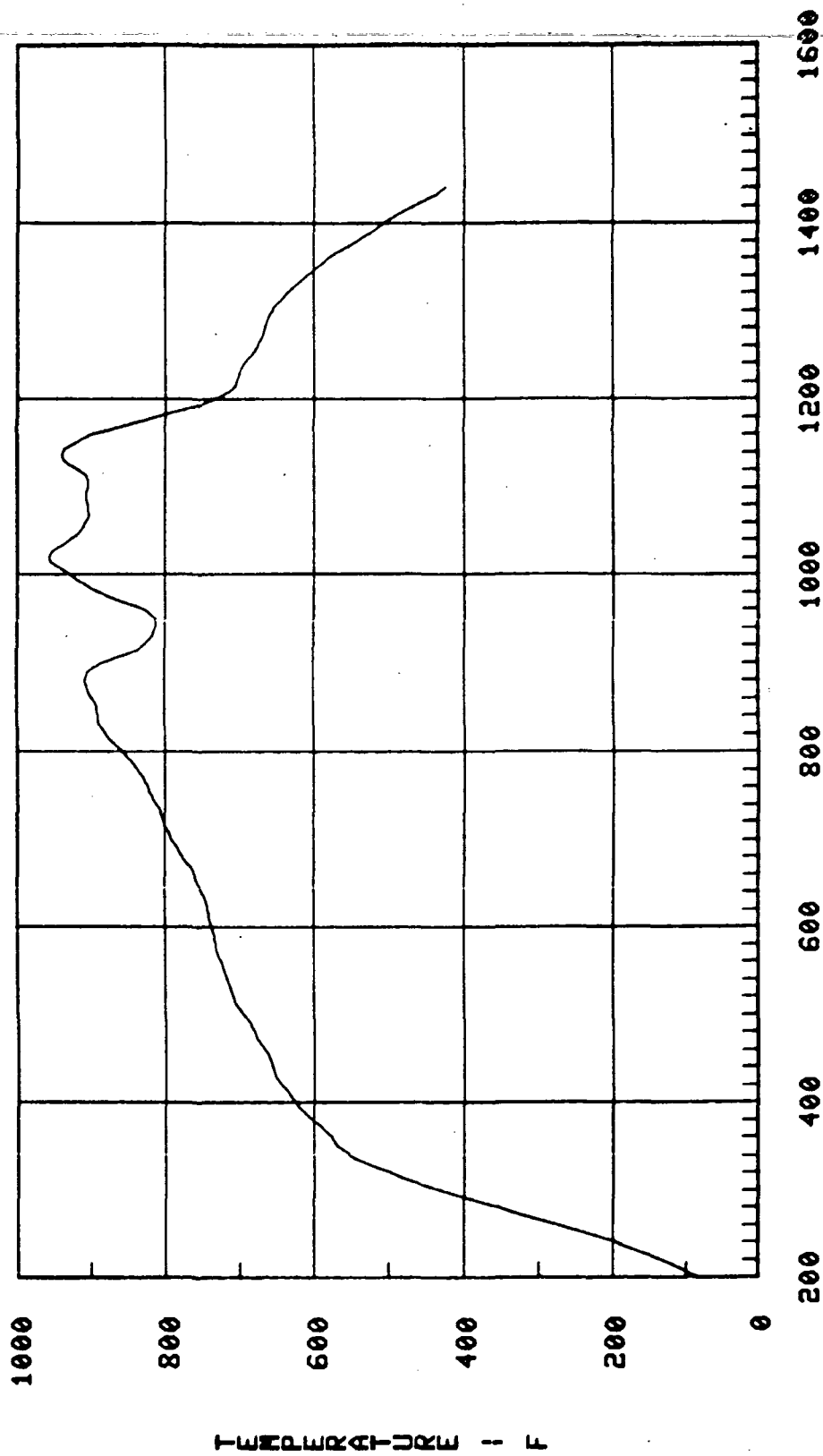


01/11/84



STS-3 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.50$ )  $Z=440$

U07T9924A

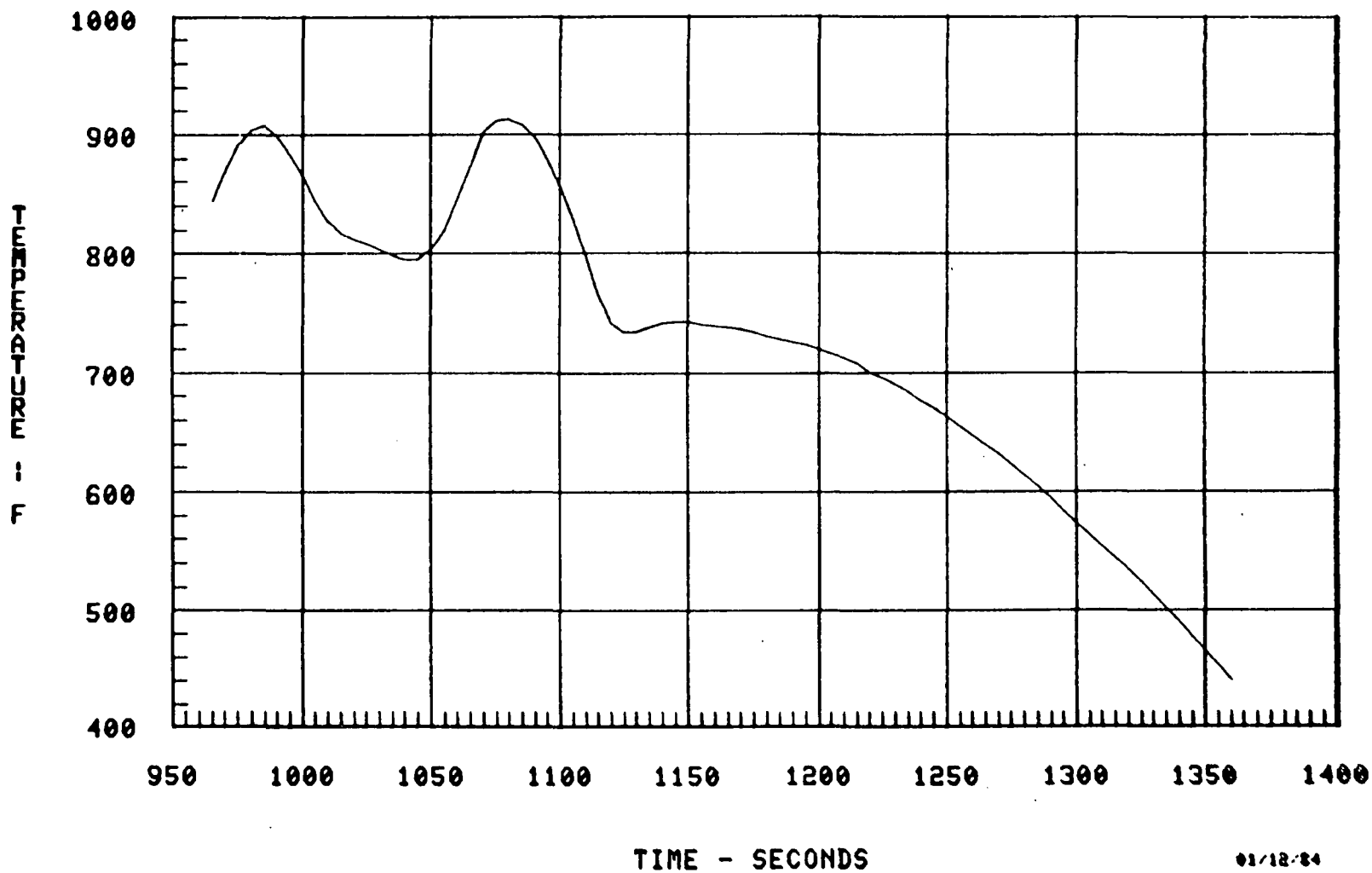


TIME - SECONDS

01/11/84

STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A

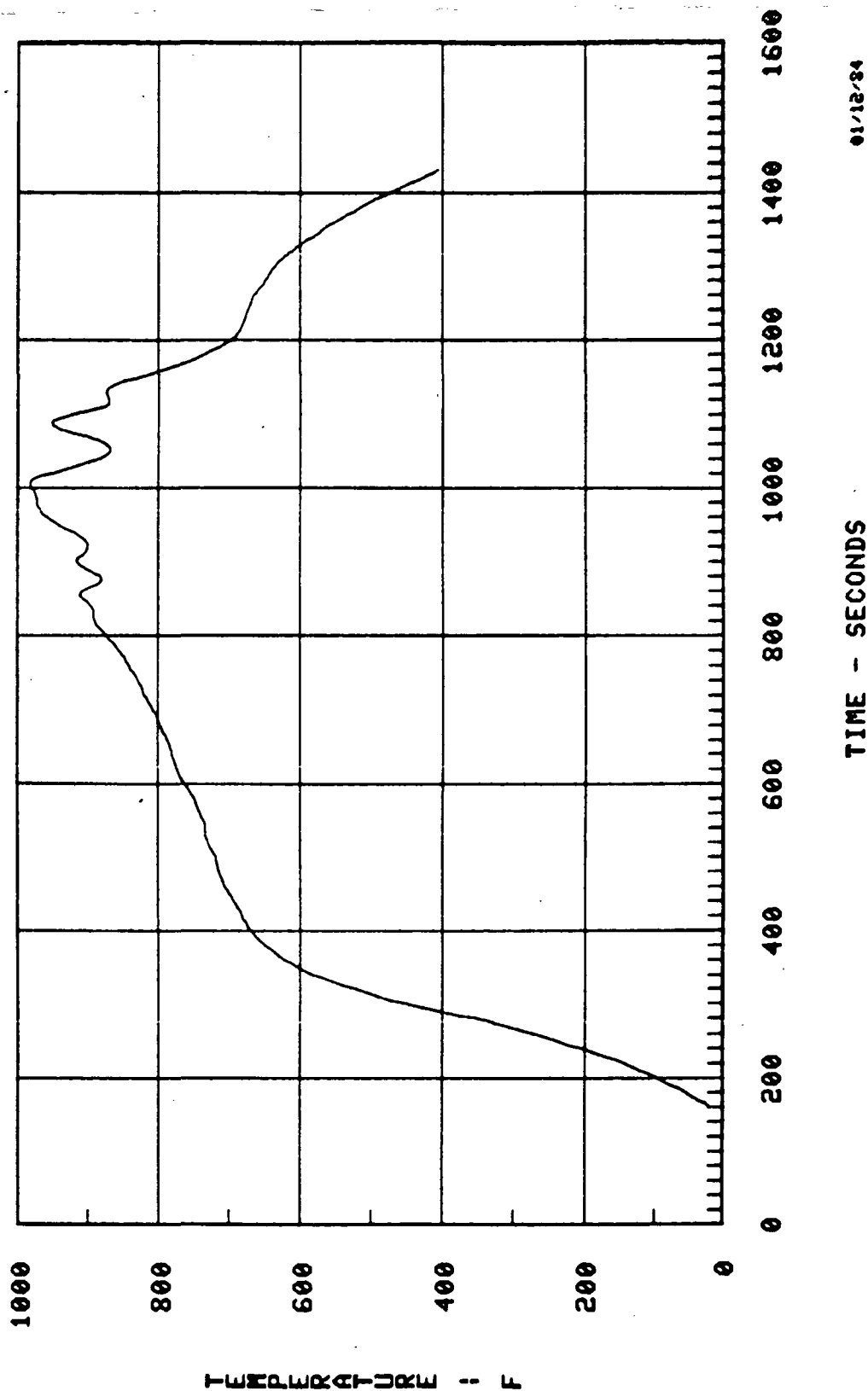


B-449

01/12/84

STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.50) Z=440

U07T9924A



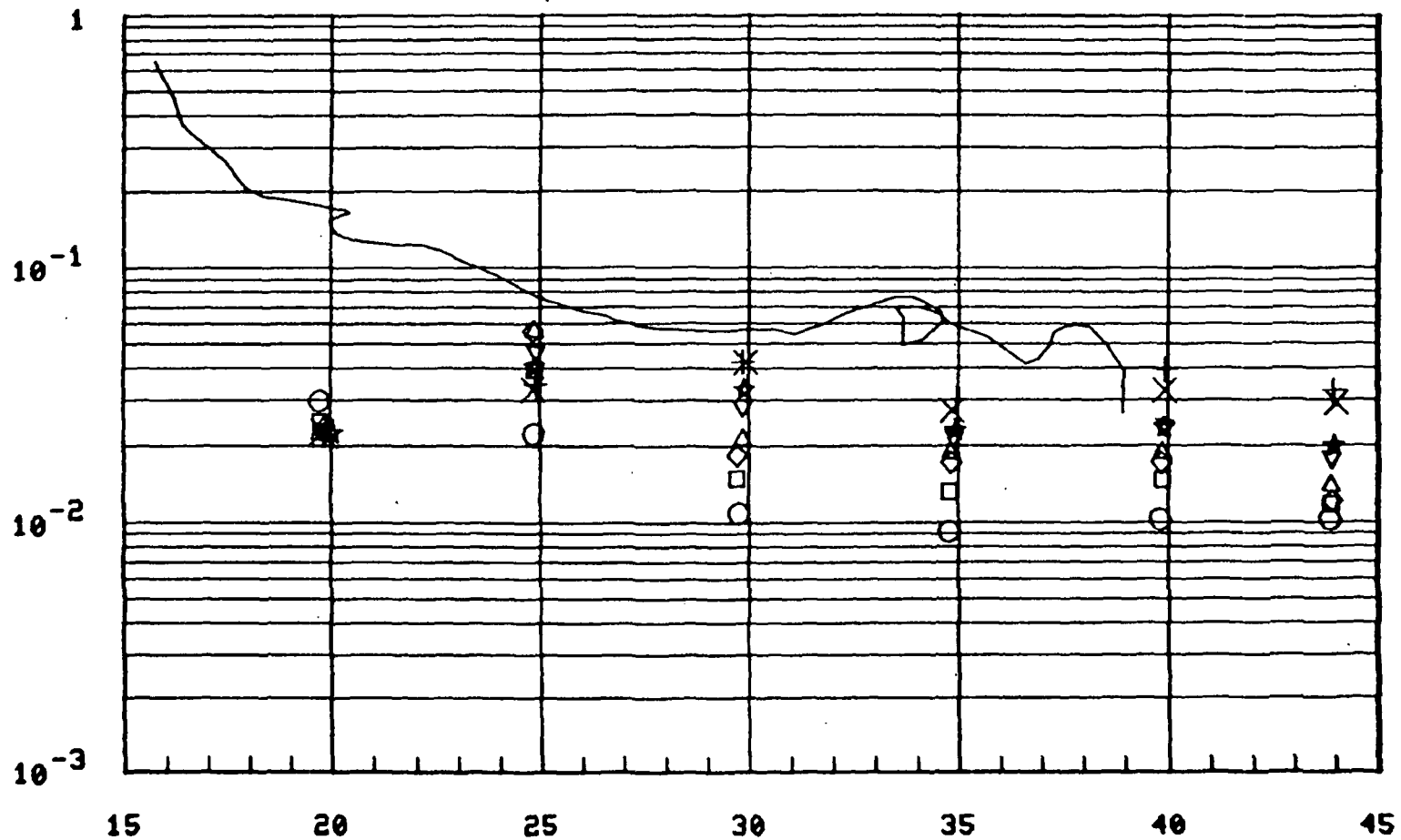
# STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9913A/H-REF 1065-1500 SEC

BASE COEFF - H/H-REF



B-451

ANGLE-OF-ATTACK - DEG

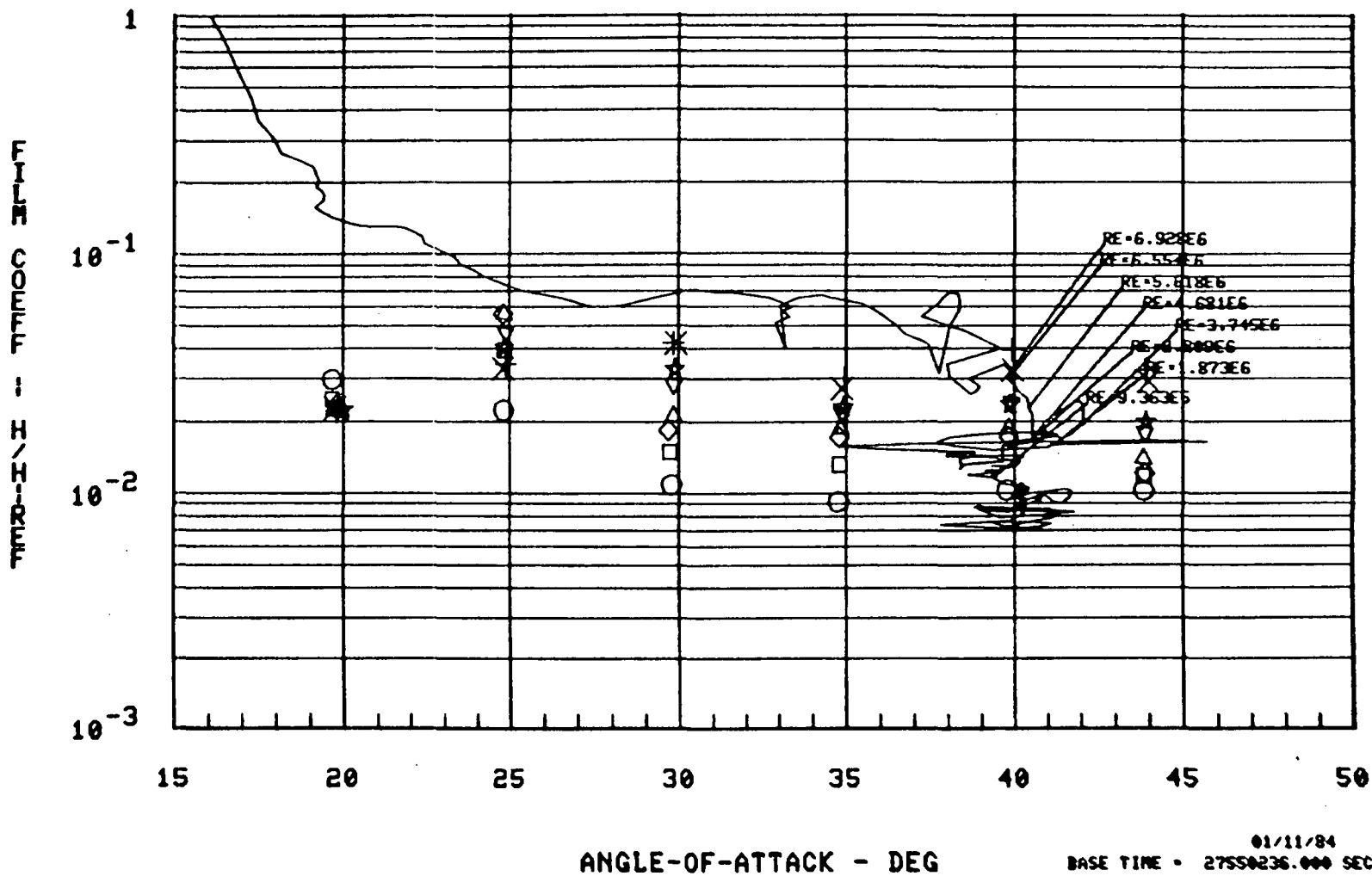
01/11/84  
BASE TIME = 09049744.000 SEC.

STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A/H-REF 200-1530 SEC

○□△▽☆±×

```
OH74 0.0175 SCALE RE - 0.5 E06
OH74 0.0175 SCALE RE - 1.0 E06
OH74 0.0175 SCALE RE - 1.5 E06
OH74 0.0175 SCALE RE - 2.0 E06
OH74 0.0175 SCALE RE - 2.5 E06
OH74 0.0175 SCALE RE - 3.0 E06
OH74 0.0175 SCALE RE - 3.5 E06
OH74 0.0175 SCALE RE - 3.7 E06
```



**B-452**

01/11/84  
BASE TIME • 27550236.000 SEC.

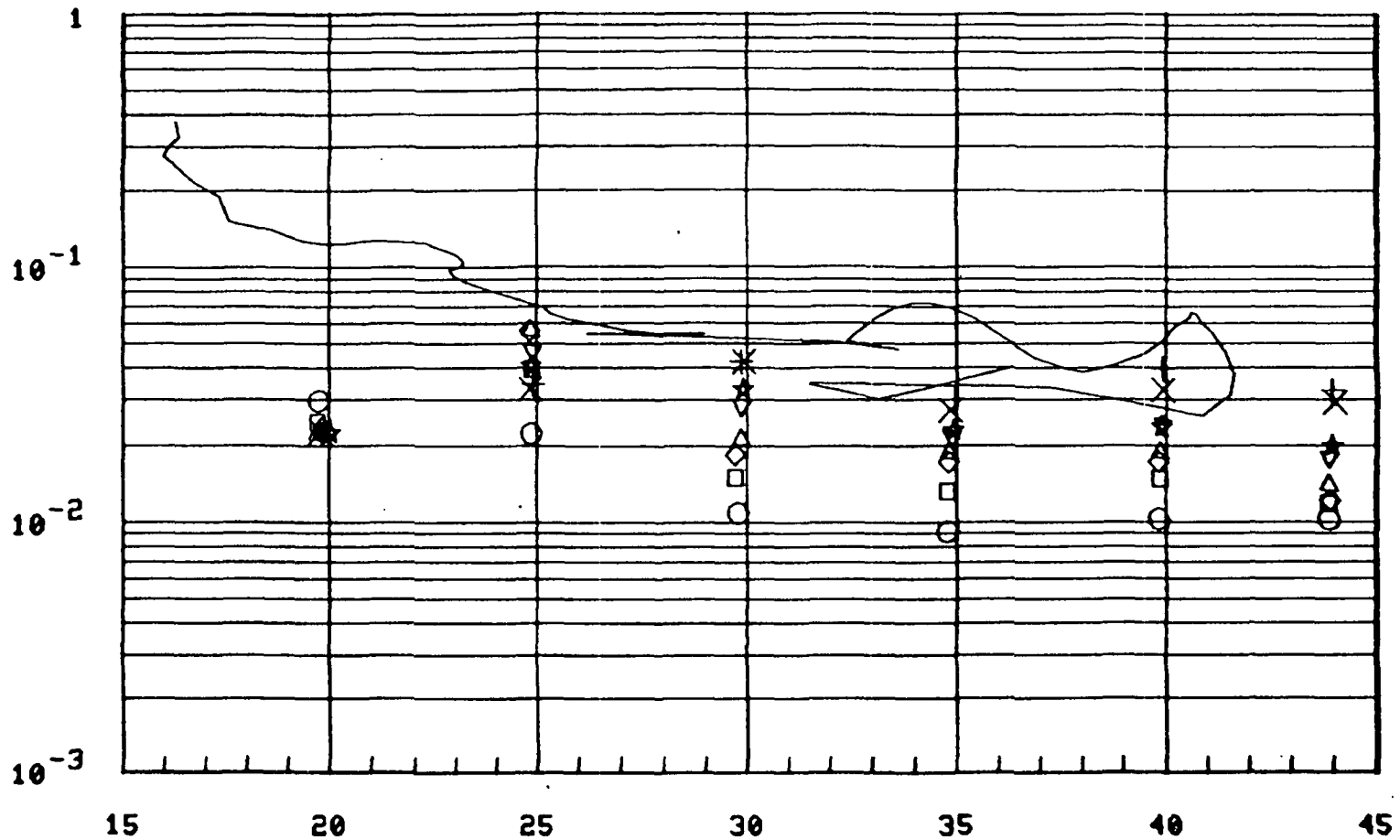
# STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

○  
◇  
△  
▽  
★  
+  
×

OH74 0.0175 SCALE RE • 0.5 E06  
OH74 0.0175 SCALE RE • 1.0 E06  
OH74 0.0175 SCALE RE • 1.5 E06  
OH74 0.0175 SCALE RE • 2.0 E06  
OH74 0.0175 SCALE RE • 2.5 E06  
OH74 0.0175 SCALE RE • 3.0 E06  
OH74 0.0175 SCALE RE • 3.5 E06  
OH74 0.0175 SCALE RE • 3.7 E06

U07T9913A/H-REF 965-1360 SEC

LINE COUNT - I/I-0.001



ANGLE-OF-ATTACK - DEG

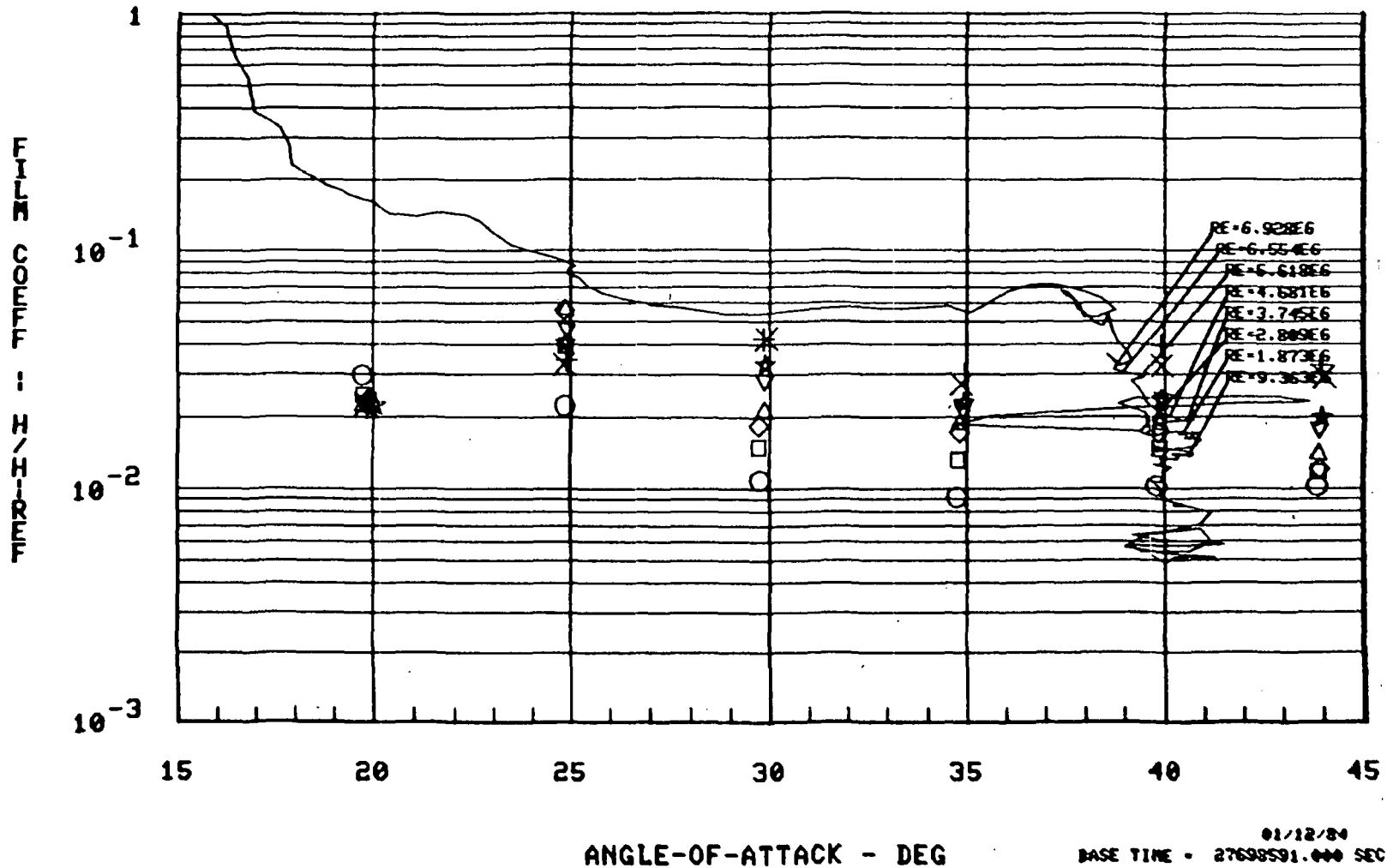
01/12/84  
BASE TIME - 16040423.000 SEC.

# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

○  
◇  
△  
▽  
★  
+  
X

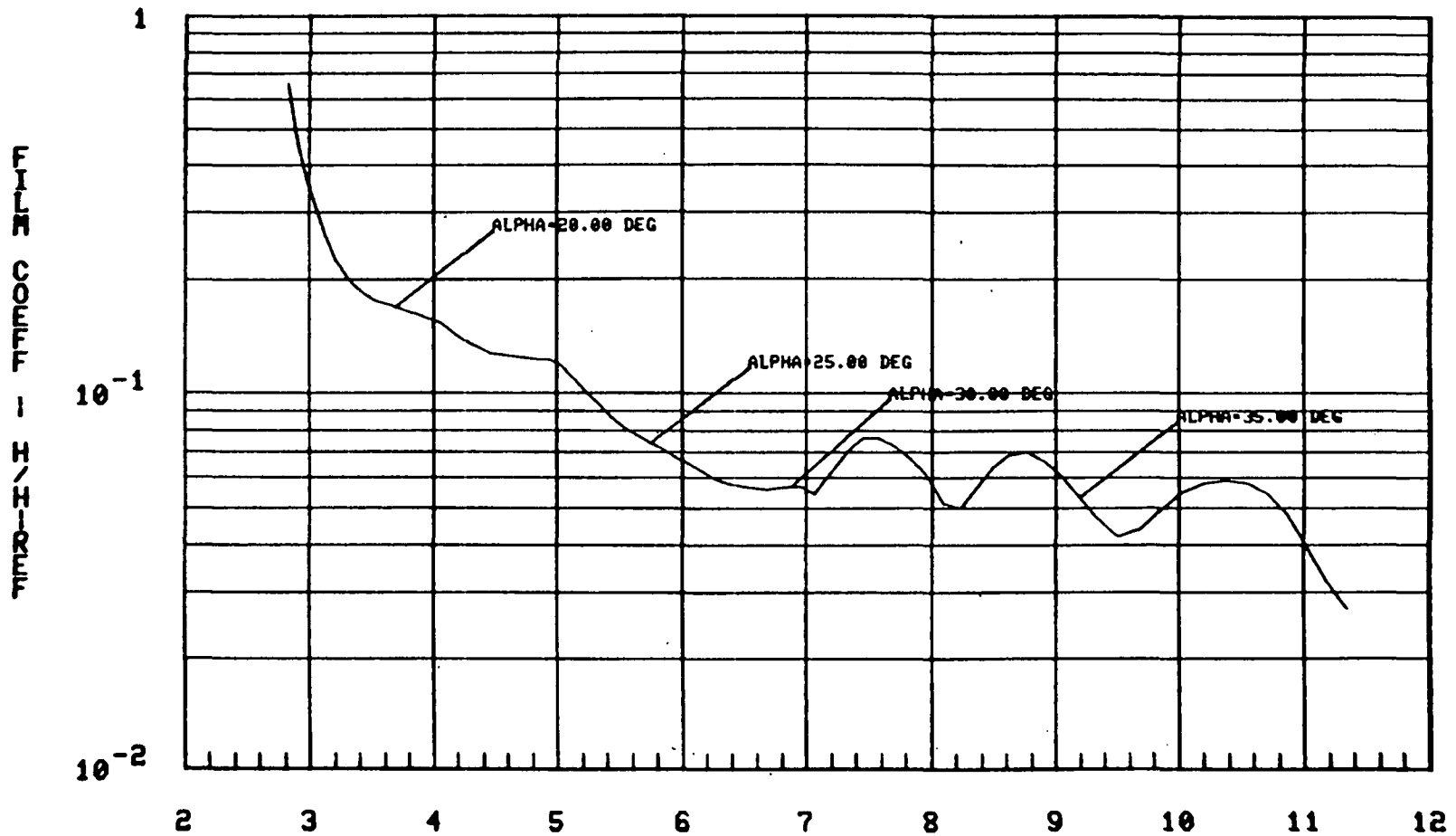
OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9913A/H-REF 150-1430 SEC



# STS-1 (107 FT LENGTH SIDE PLB DOOR $X/L=0.60$ ) $Z=440$

U07T9913A/H-REF 1065-1500 SEC



B-455

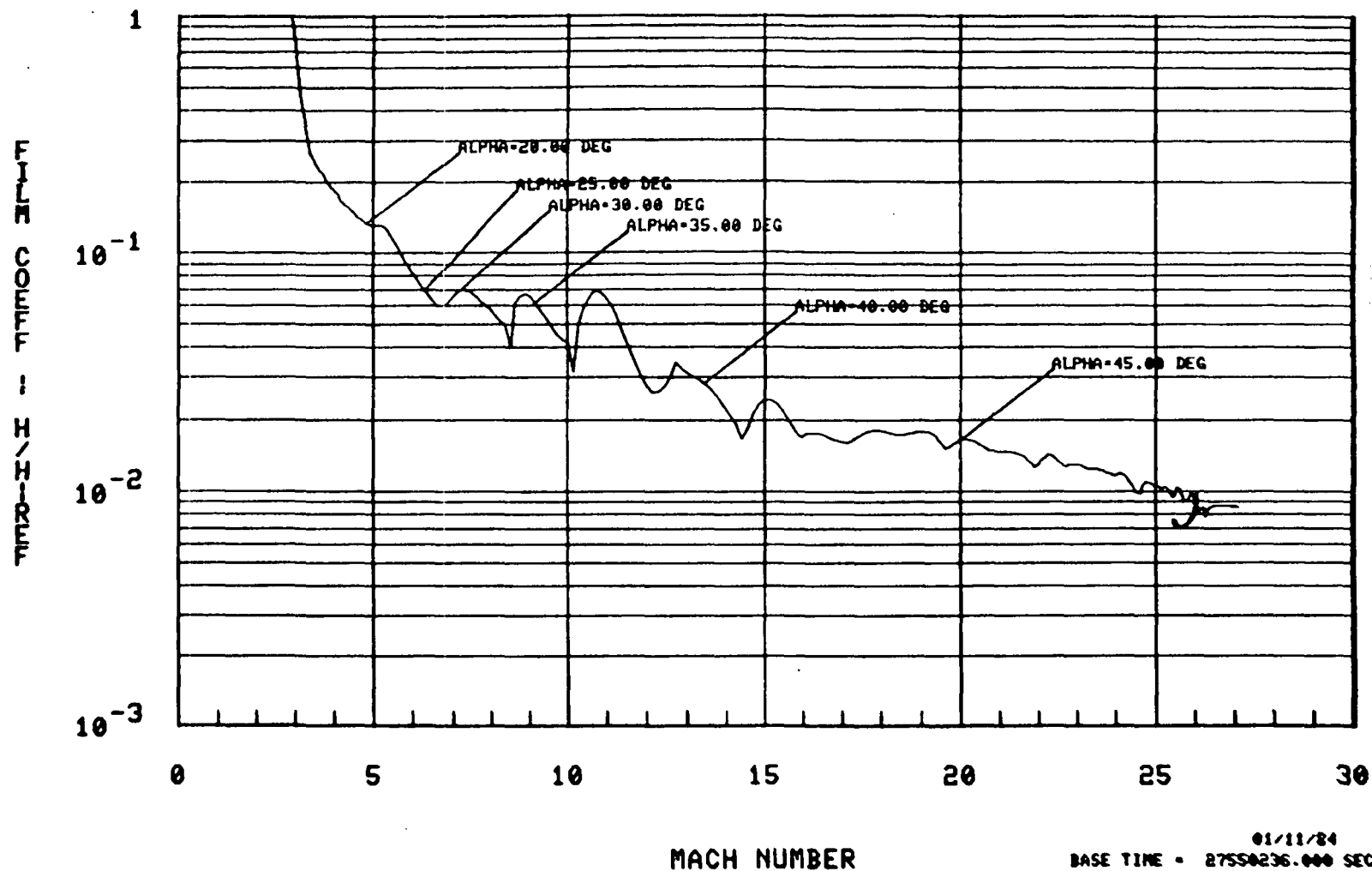
MACH NUMBER

01/11/84  
BASE TIME = 09049744.000 SEC.



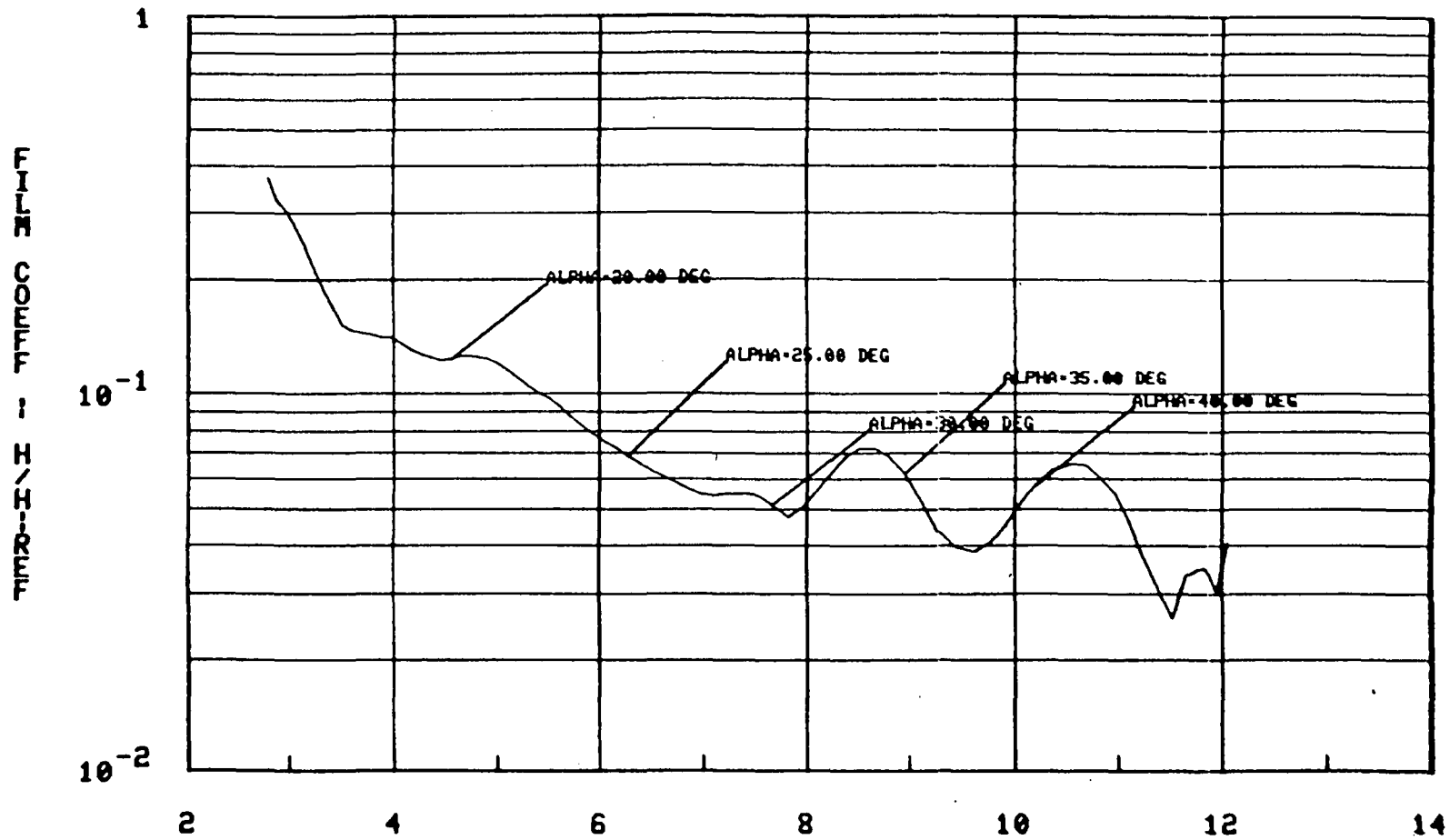
# STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A/H-REF 200-1530 SEC



STS-4 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.60$ )  $Z=440$

U07T9913A/H-REF 965-1360 SEC



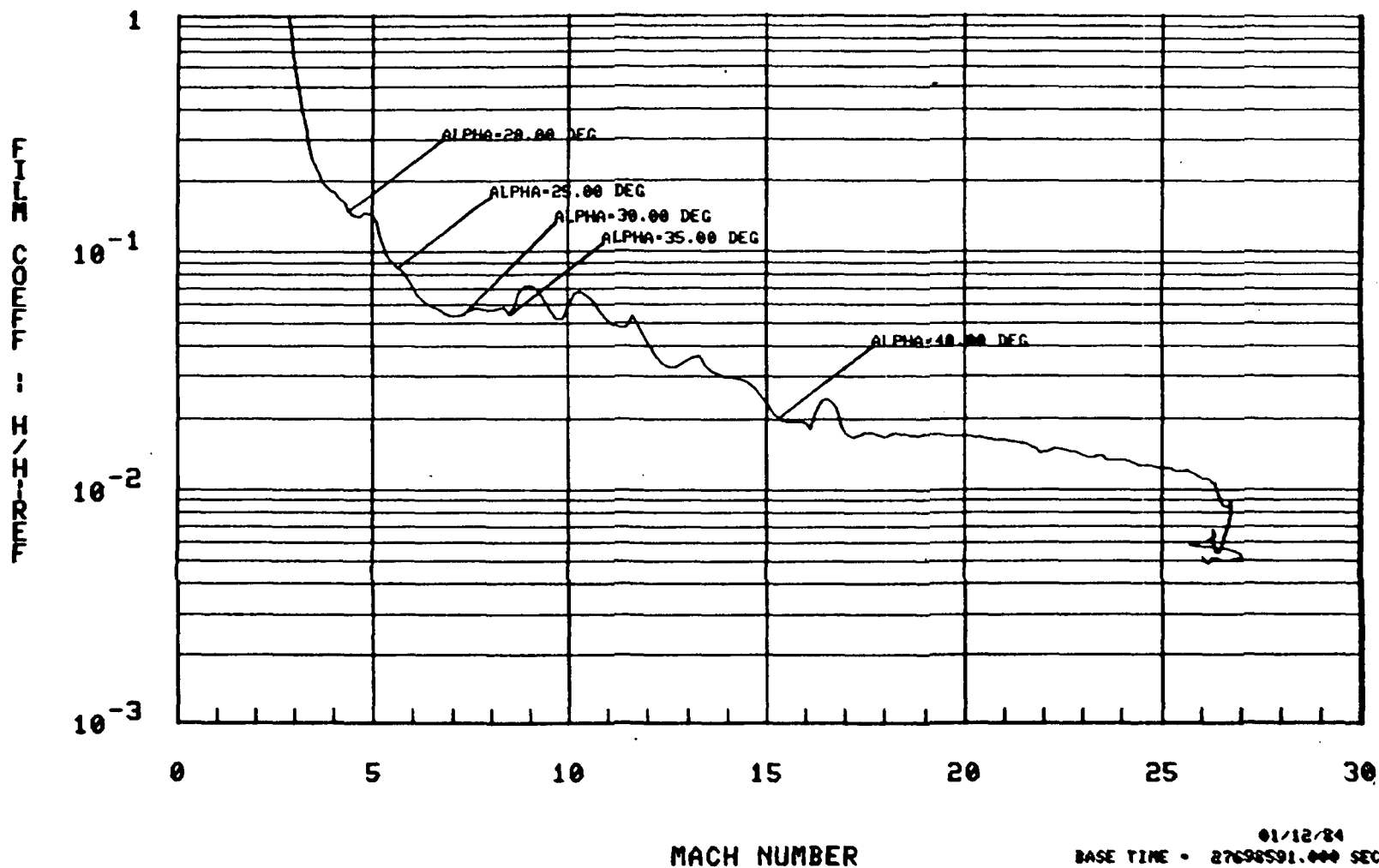
B-457

MACH NUMBER

01/12/84  
BASE TIME = 1004423.000 SEC.

# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A/H-REF 150-1430 SEC

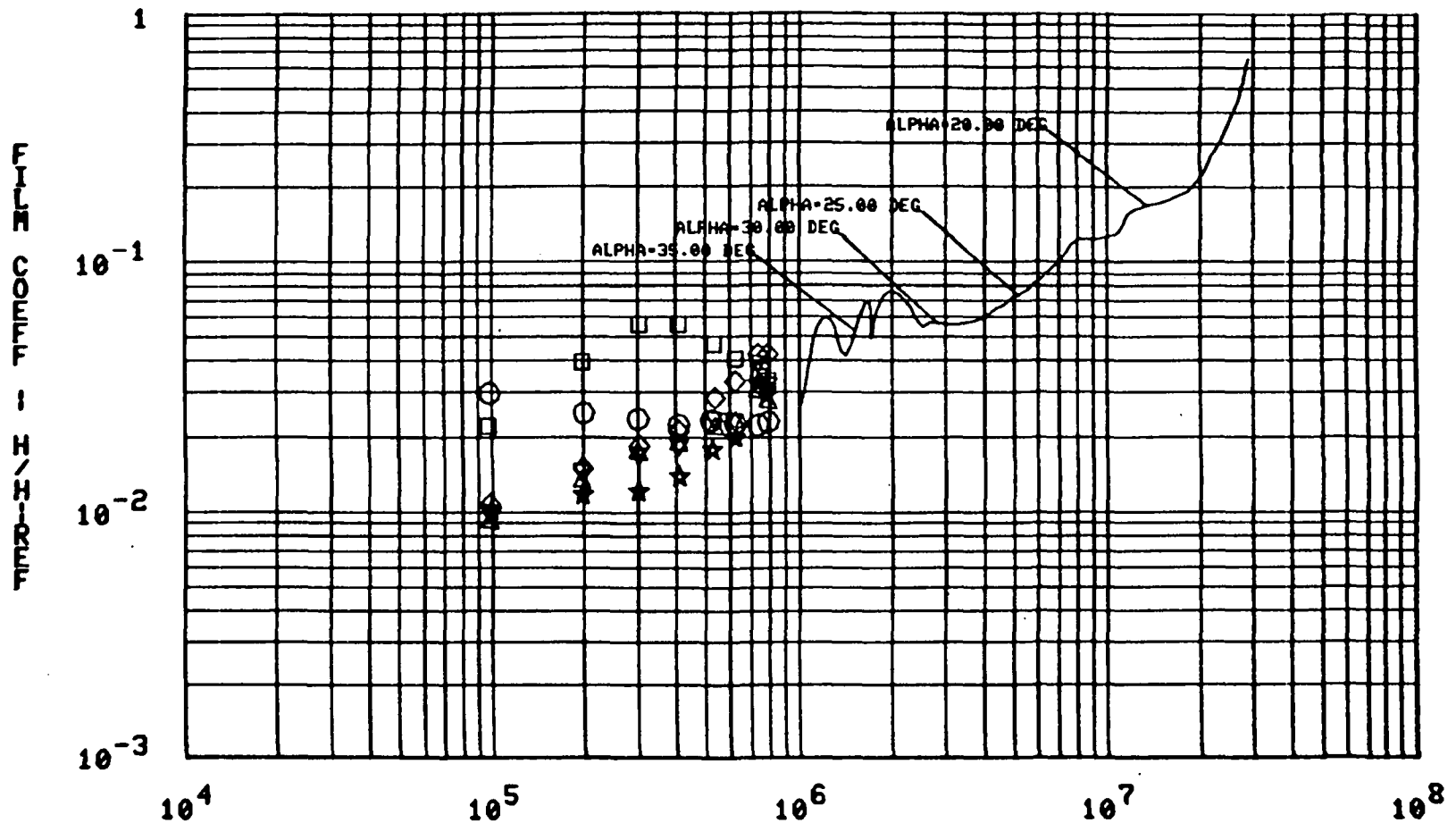


# STS-1 (107 FT LENGTH SIDE PLB DOOR $X/L=0.60$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9913A/H-REF 1065-1500 SEC



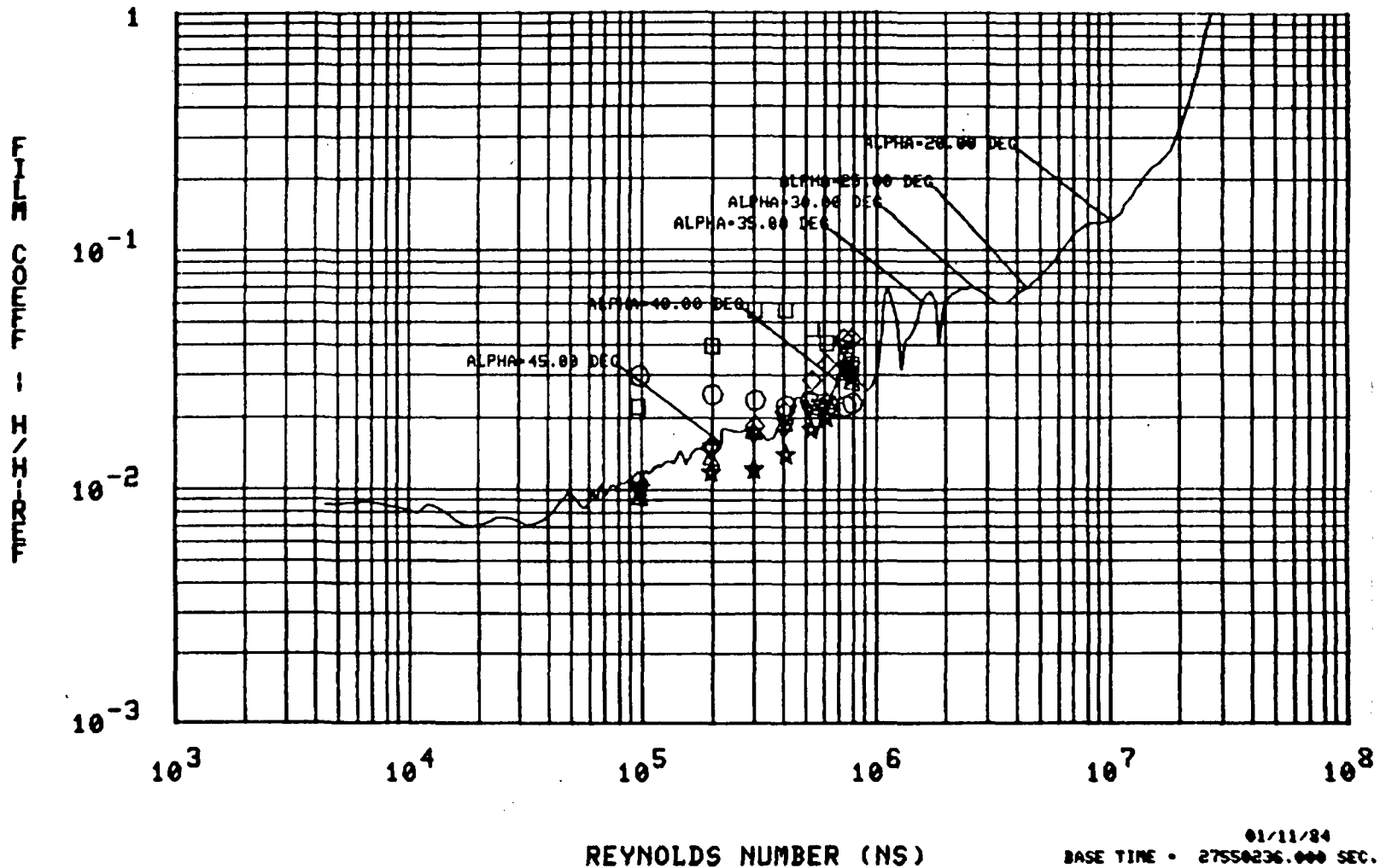
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE PLB DOOR $X/L=0.60$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9913A/H-REF 200-1530 SEC



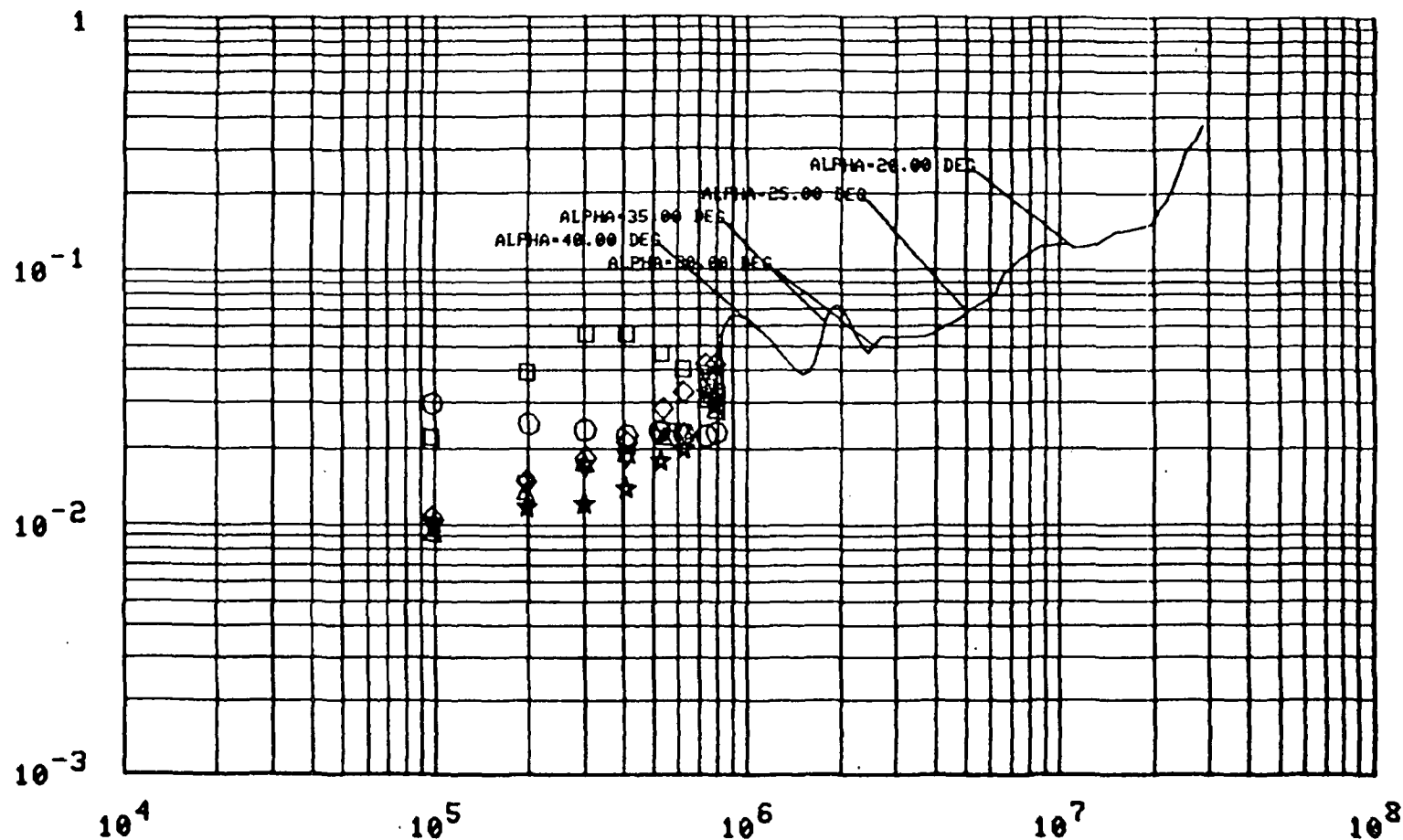
# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.60$ ) $Z=440$

○  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9913A/H-REF 965-1360 SEC

LINE COUNT - H/I-ORILL



B-461

REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 1604423.000 SEC.

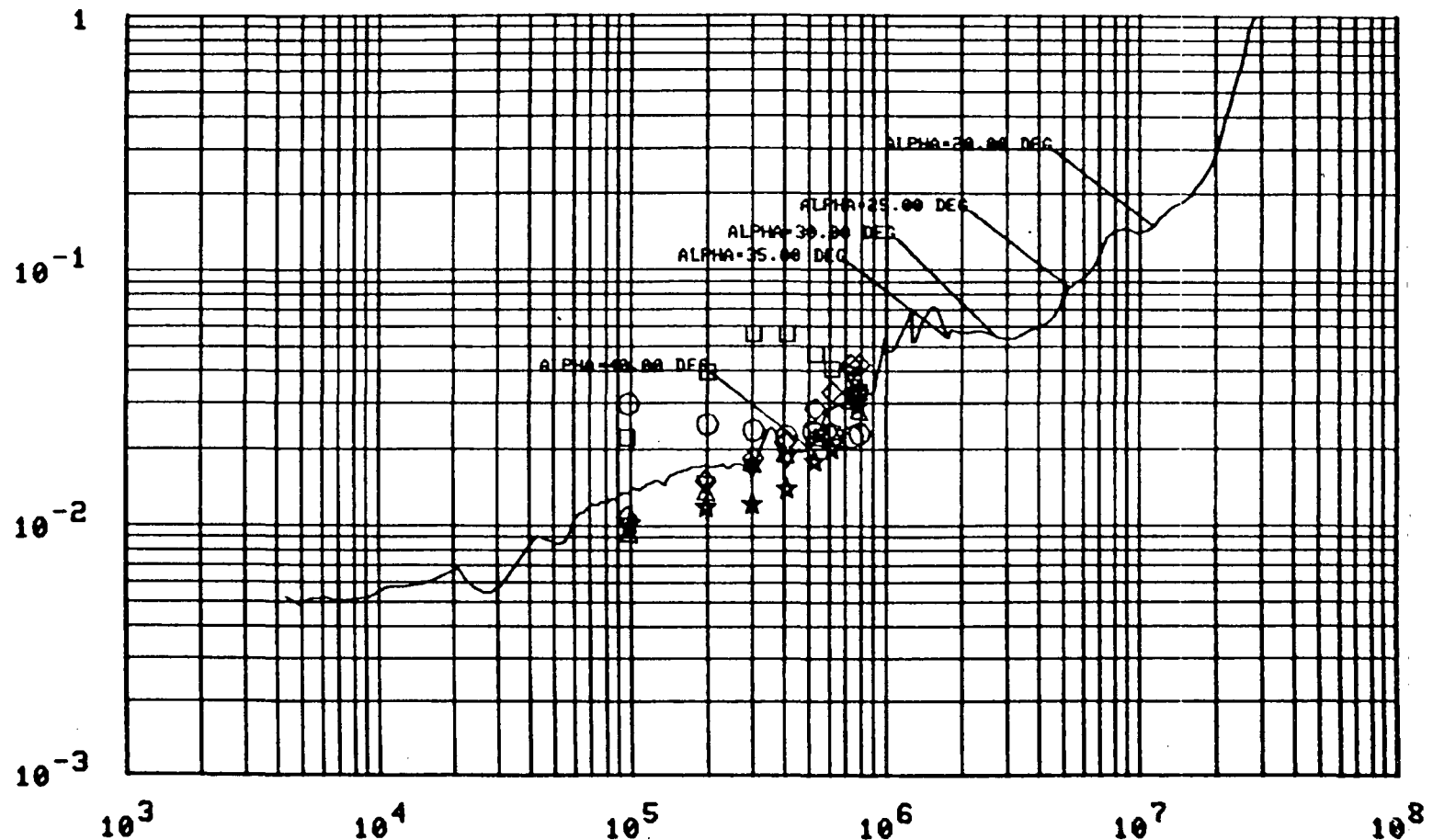
# STS-5 (107 FT LENGTH SIDE PLB DOOR $X/L=0.60$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9913A/H-REF 150-1430 SEC

LINE CODES - H/H-REF



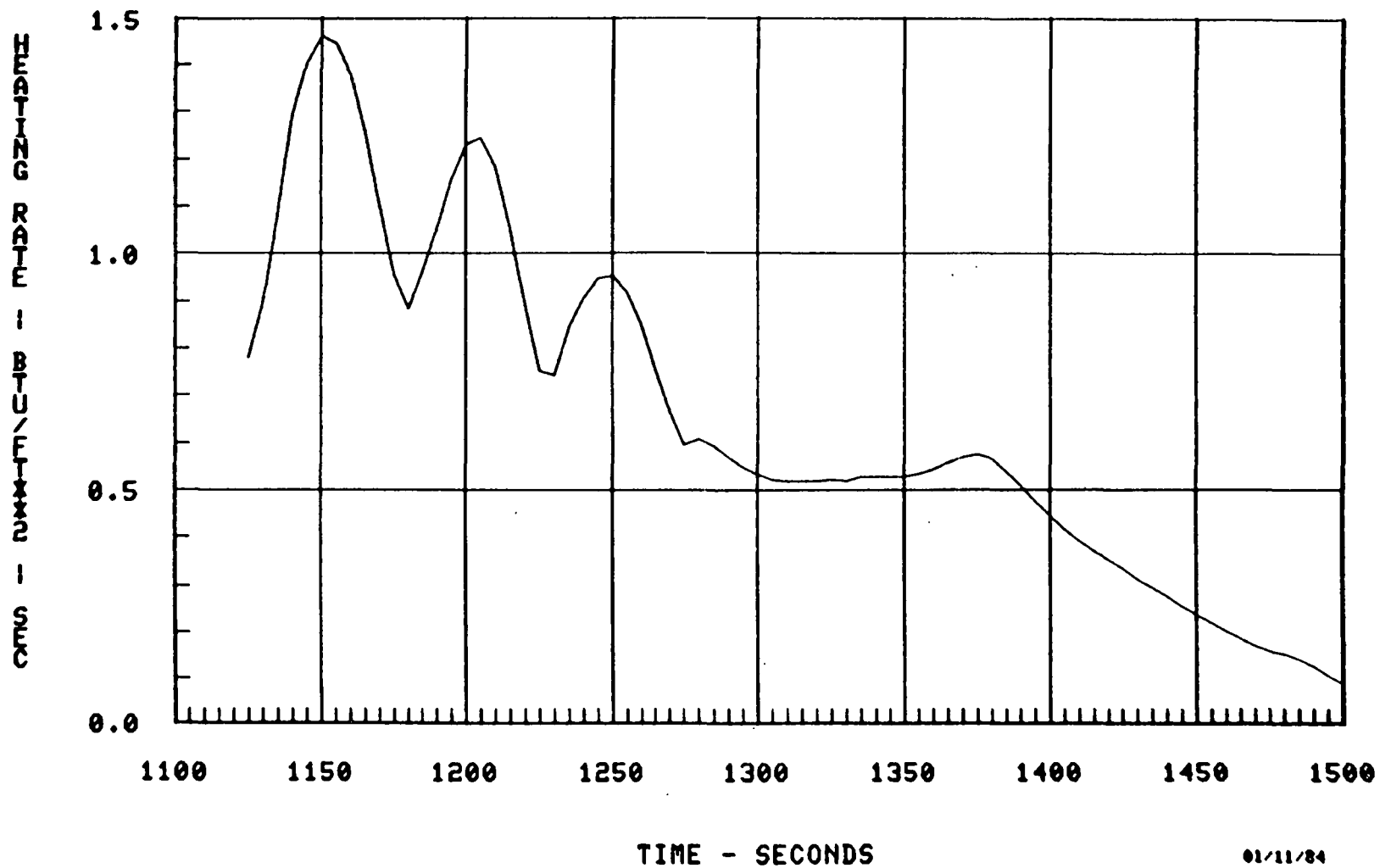
B-462

REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 2769591.000 SEC.

STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

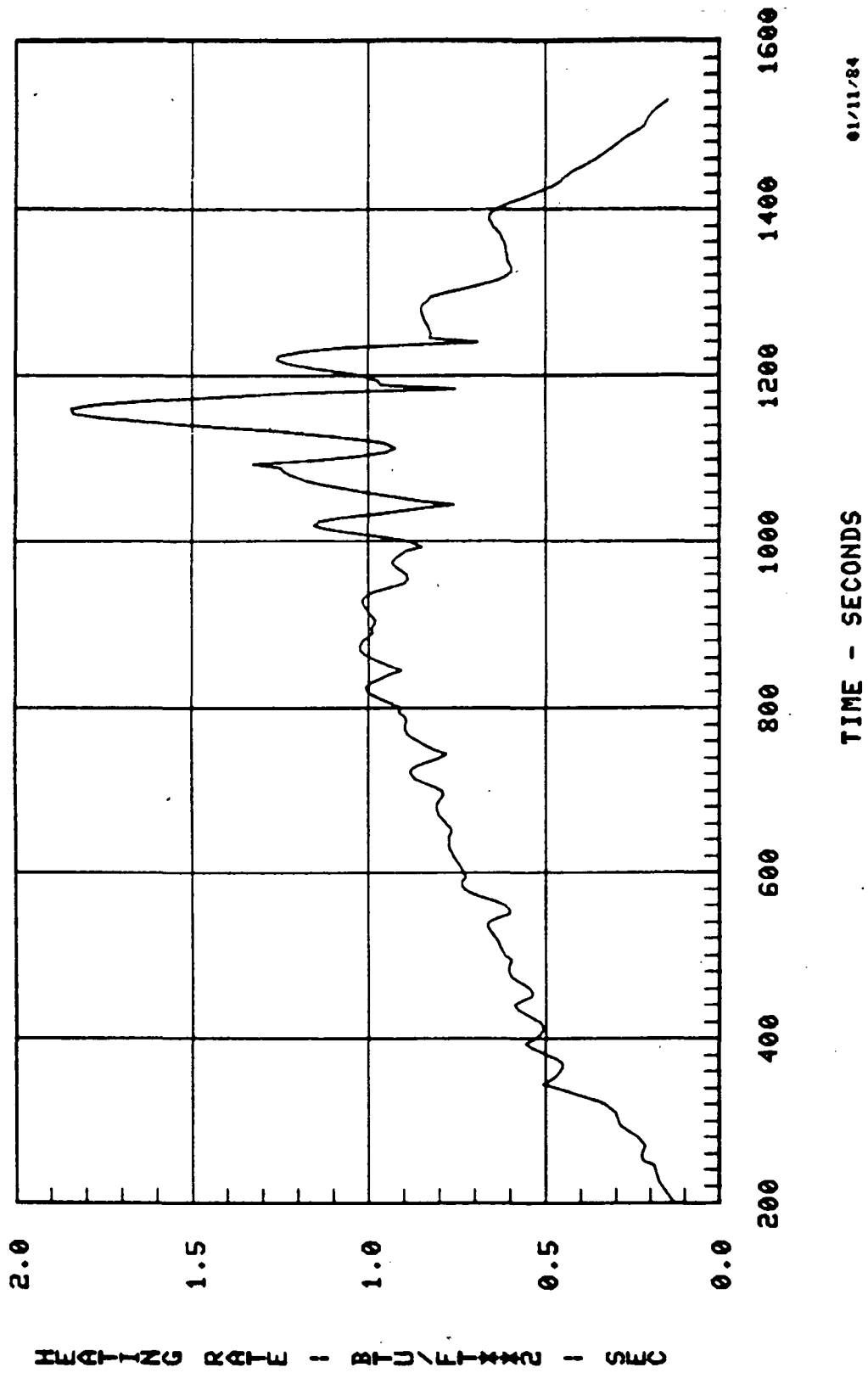
U07T9913A





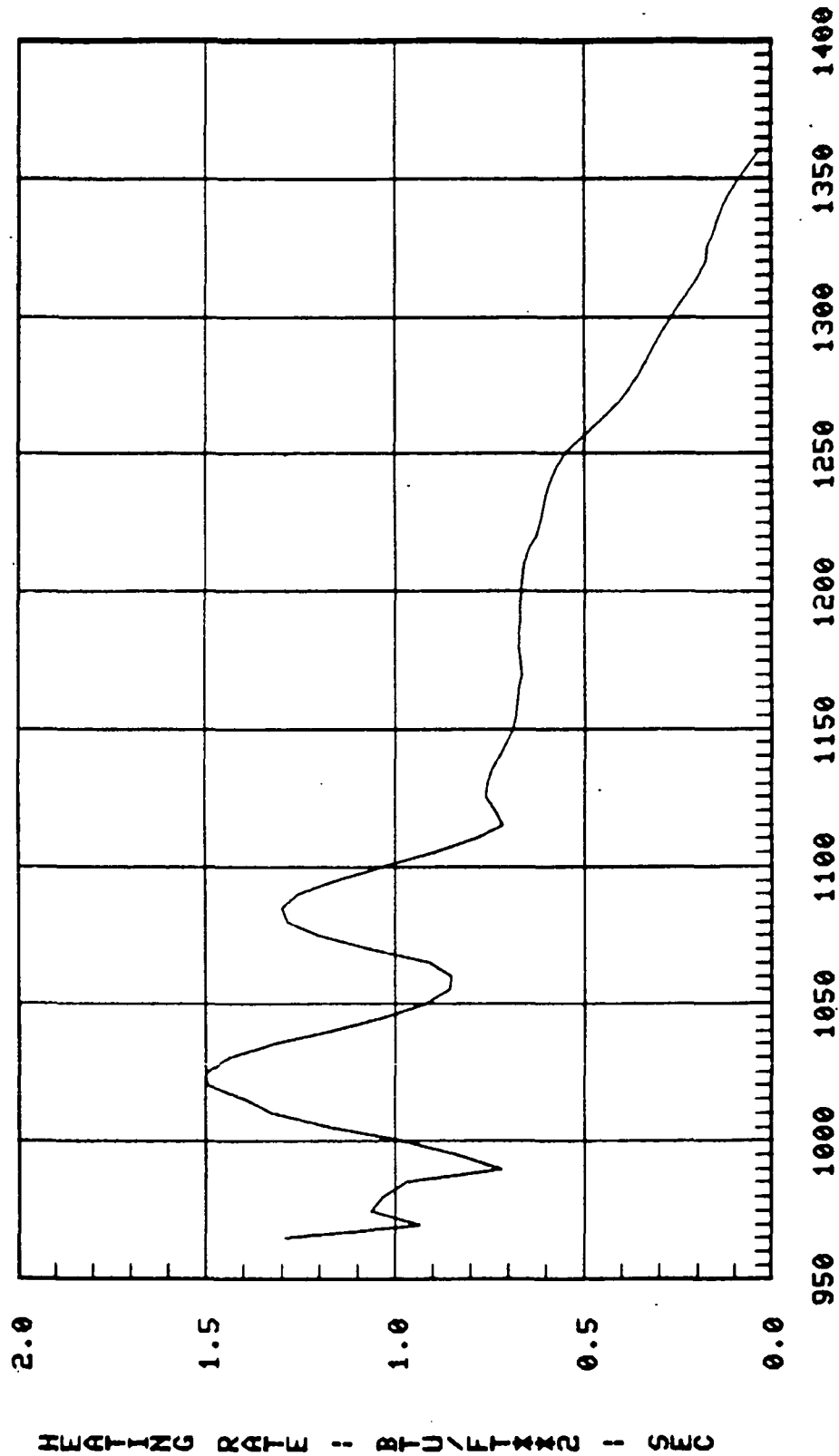
STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A



STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A

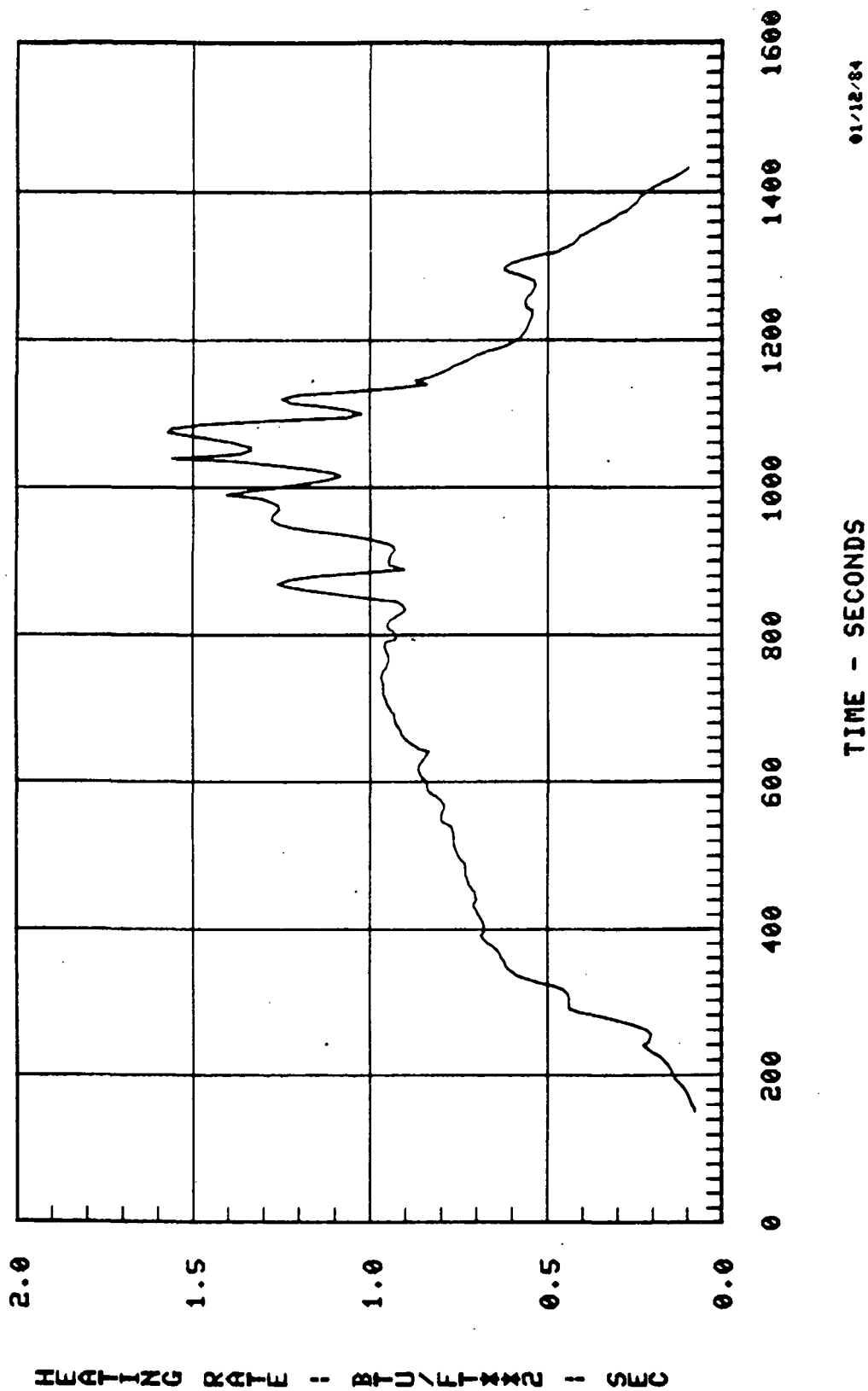


TIME - SECONDS

01/12/84

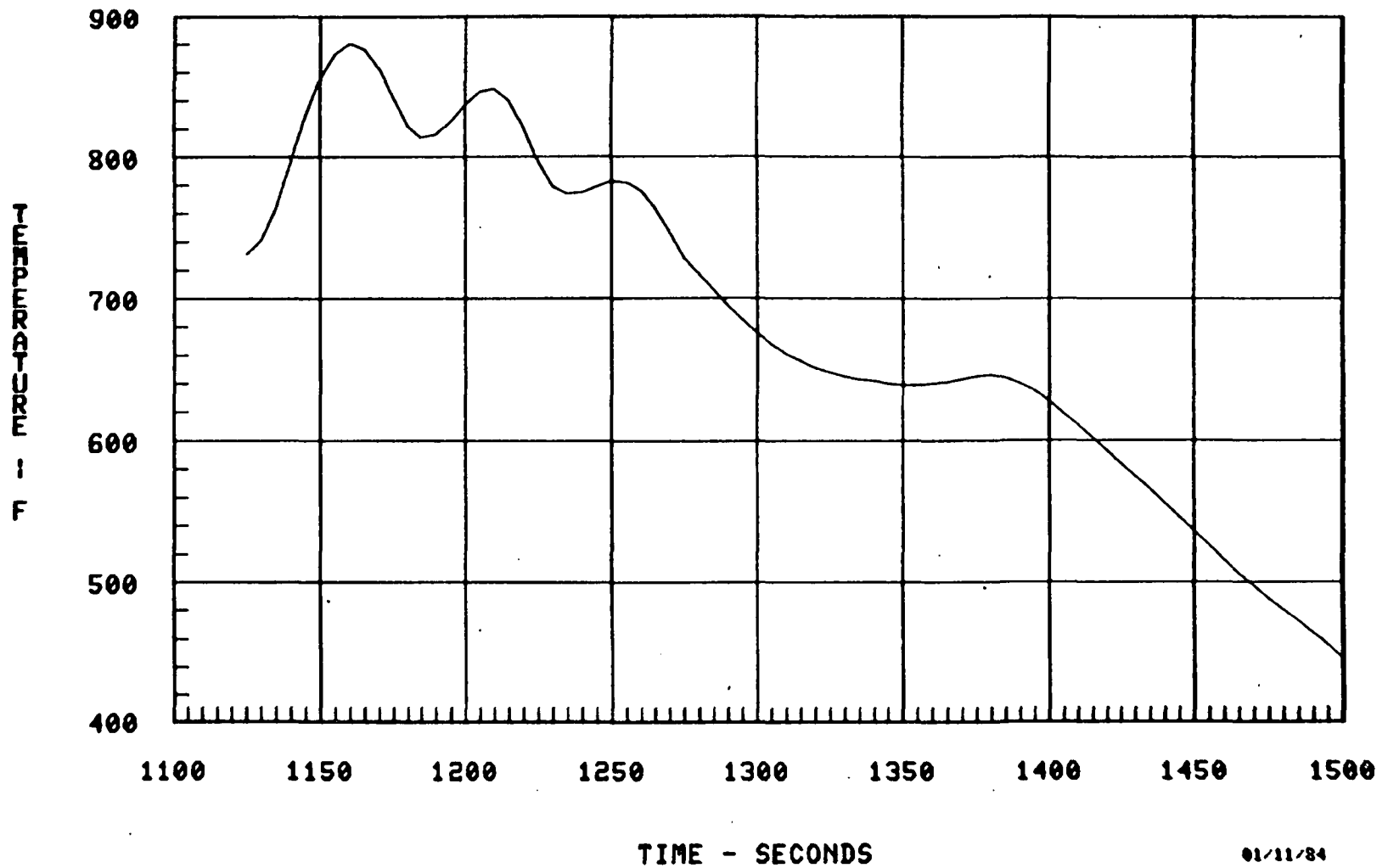
STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A



STS-1 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.60$ )  $Z=440$

U07T9913A

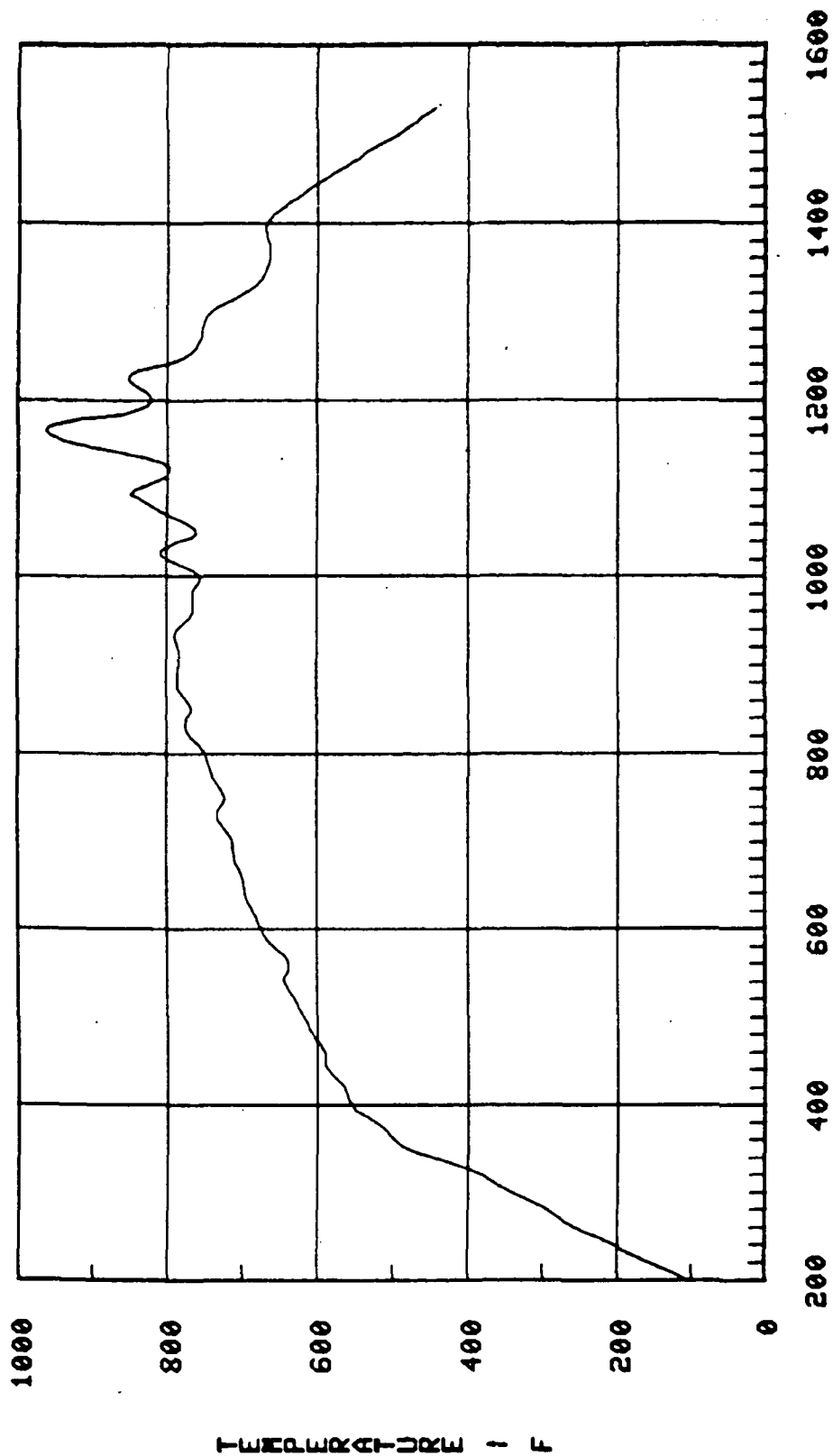


B-467

01/11/84

STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A

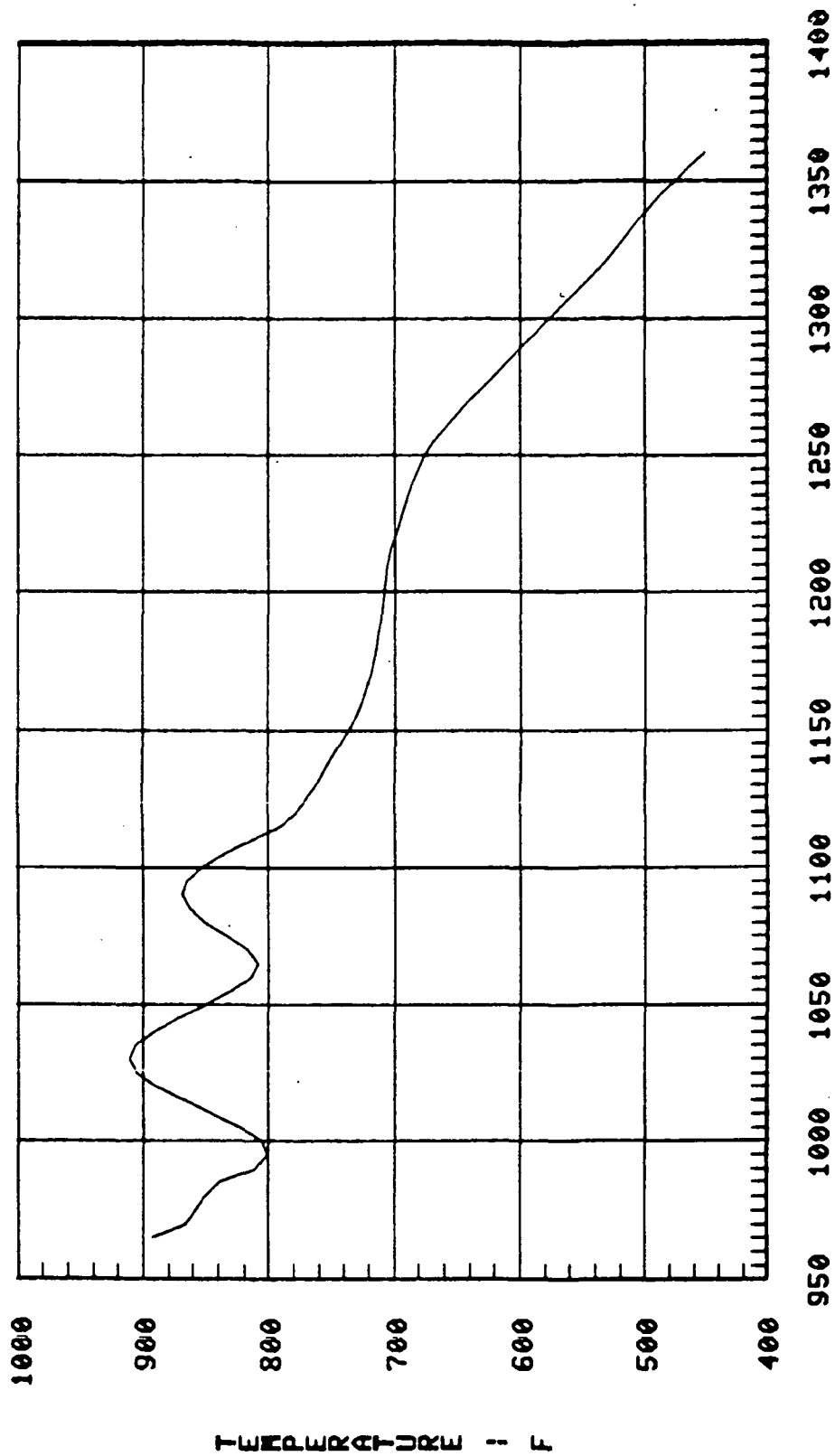


TIME - SECONDS

01/11/84

STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A

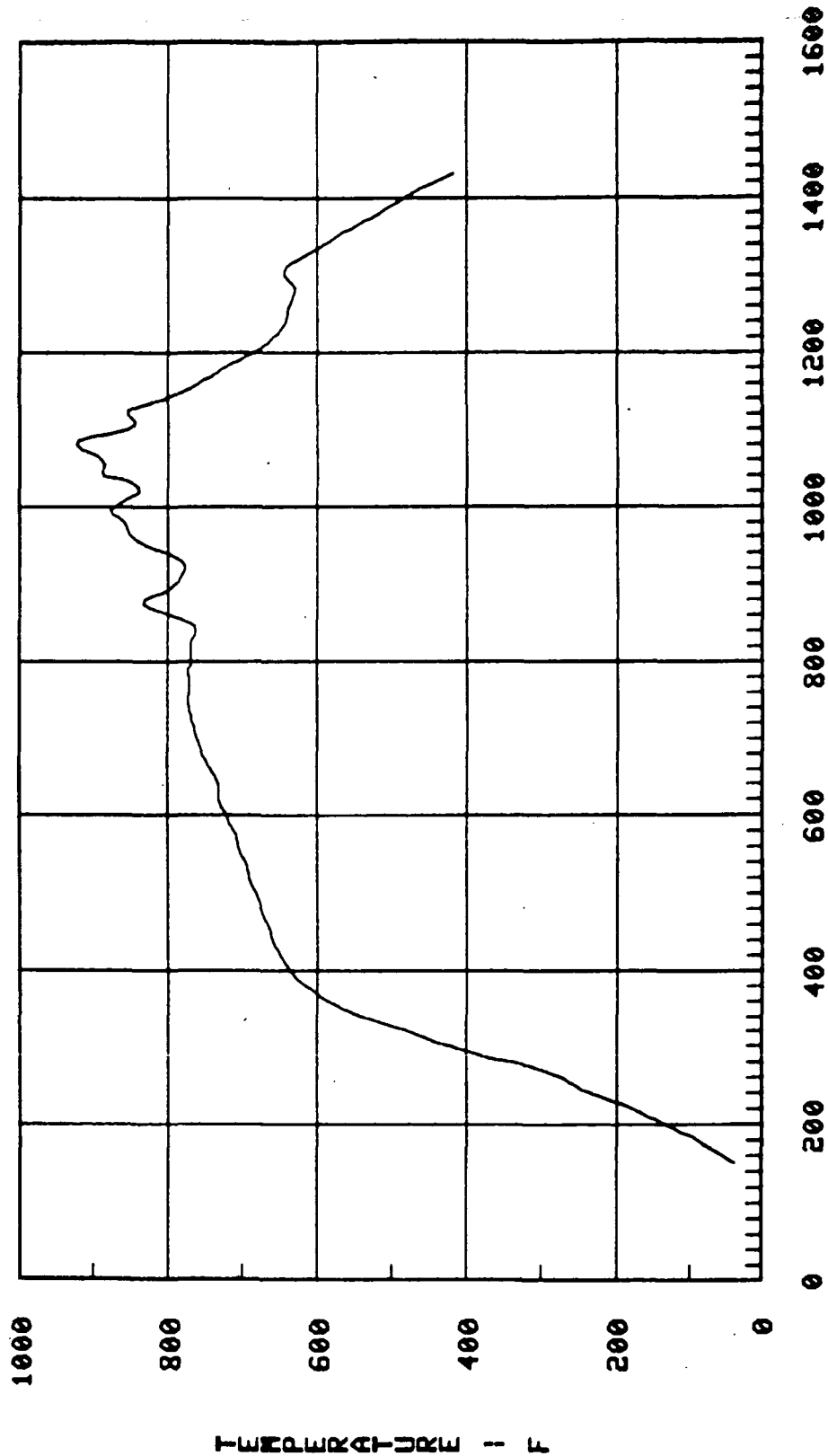


TIME - SECONDS

01/12/84

STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.60) Z=440

U07T9913A



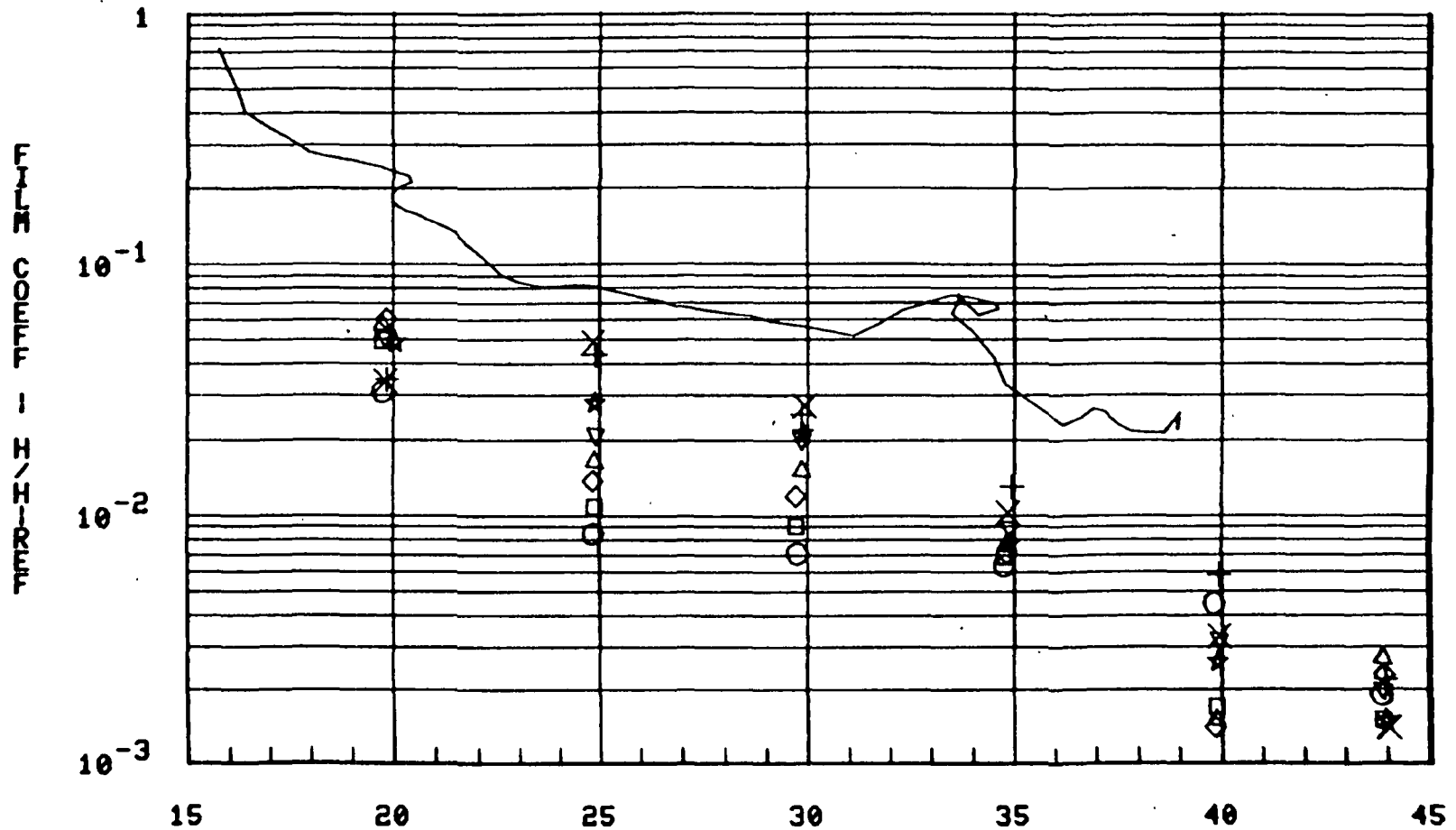
01/12/84

# STS-1 (107 FT LENGTH SIDE PLB DOOR $X/L=0.70$ ) $Z=440$

O  
□  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9925A/H-REF 1065-1500 SEC



B-471

ANGLE-OF-ATTACK - DEG

01/11/84  
 BASE TIME = 09049744.000 SEC.



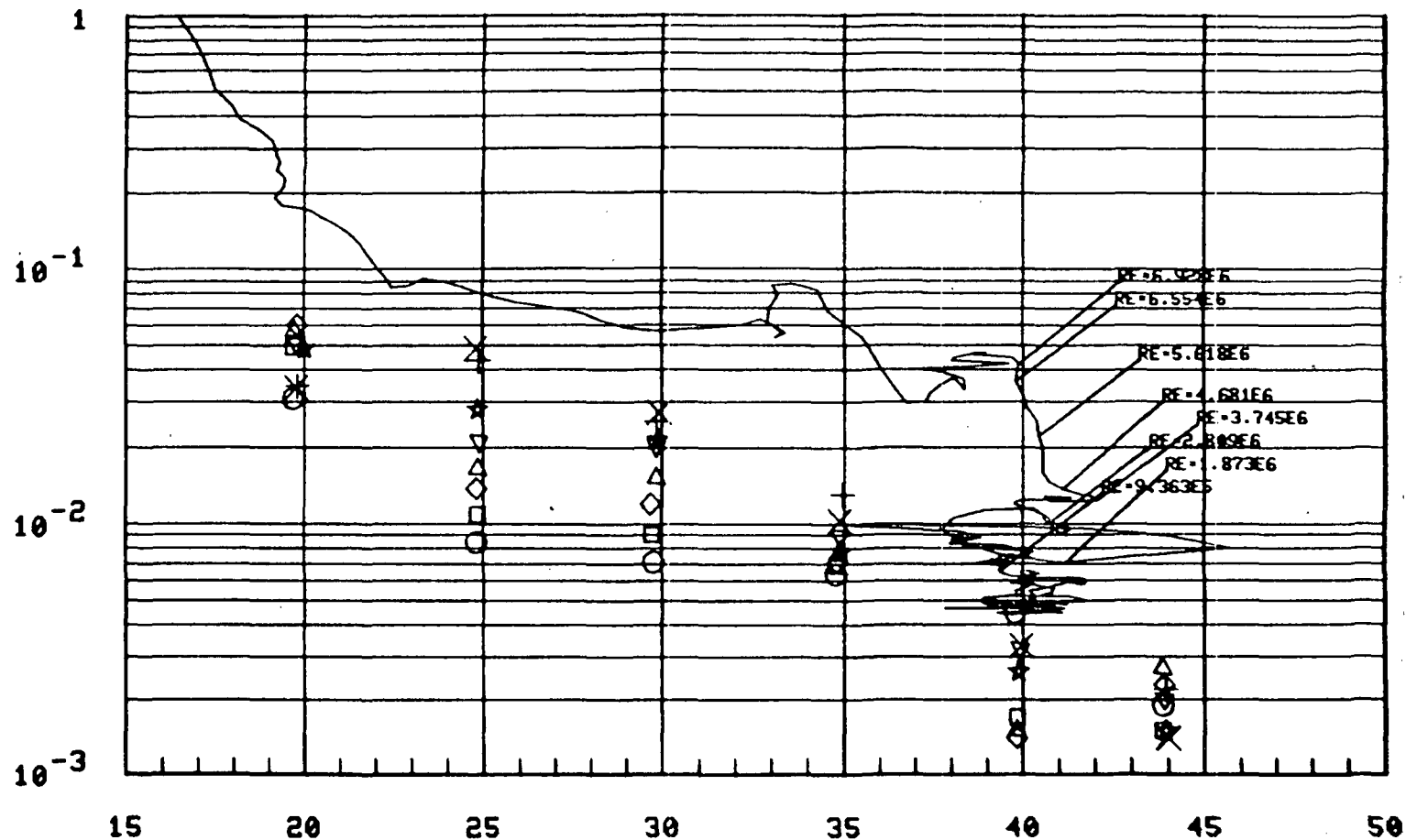
# STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

O  
 □  
 △  
 ☆  
 +  
 X

OH74 0.0175 SCALE RE • 0.5 E06  
 OH74 0.0175 SCALE RE • 1.0 E06  
 OH74 0.0175 SCALE RE • 1.5 E06  
 OH74 0.0175 SCALE RE • 2.0 E06  
 OH74 0.0175 SCALE RE • 2.5 E06  
 OH74 0.0175 SCALE RE • 3.0 E06  
 OH74 0.0175 SCALE RE • 3.5 E06  
 OH74 0.0175 SCALE RE • 3.7 E06

U07T9925A/H-REF 200-1530 SEC

WAVE COEFF - H/E-0.001



ANGLE-OF-ATTACK - DEG

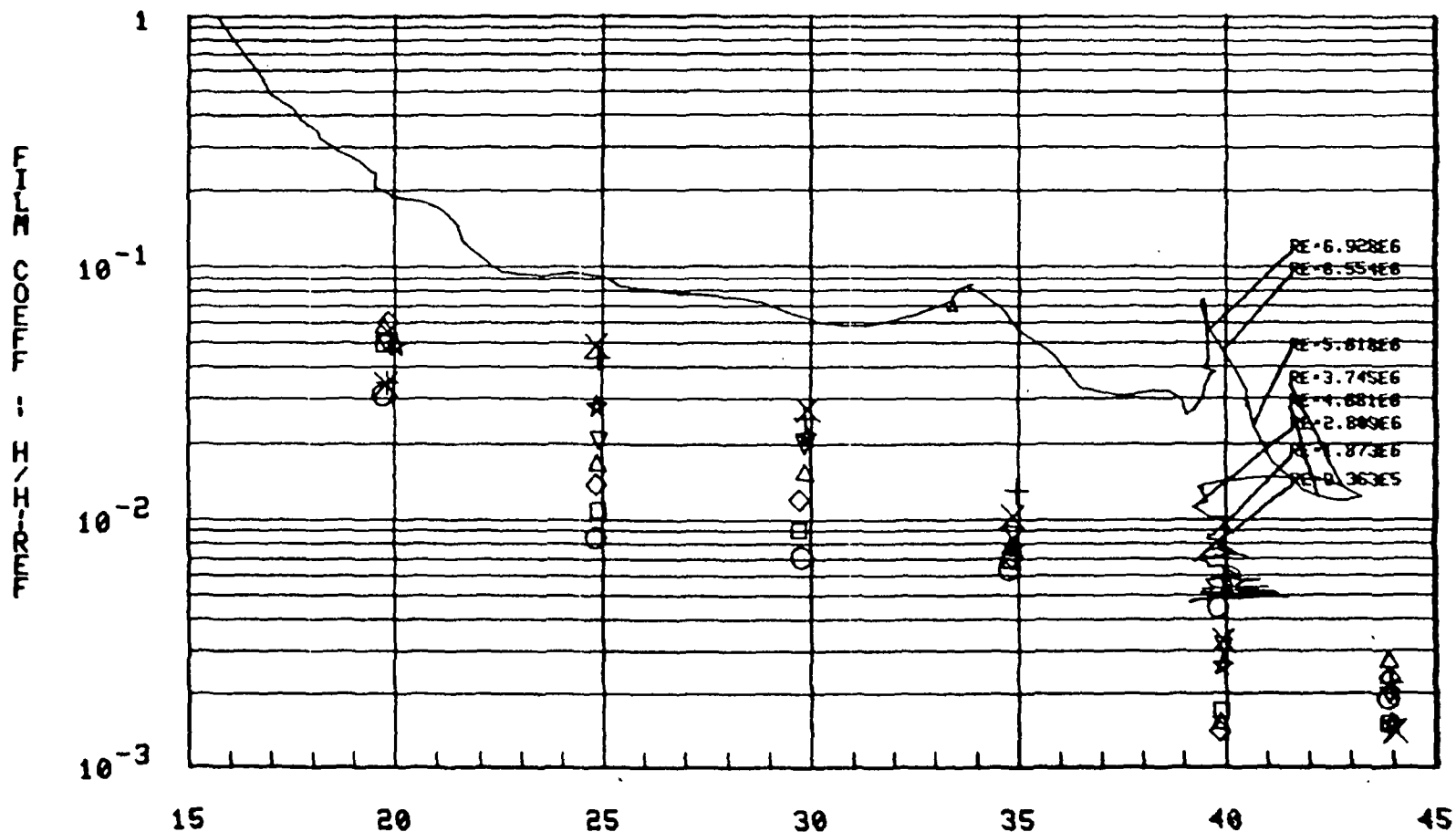
01/11/84  
 BASE TIME • 27550236.000 SEC.

# STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9925A/H-REF 200-1440 SEC



ANGLE-OF-ATTACK - DEG

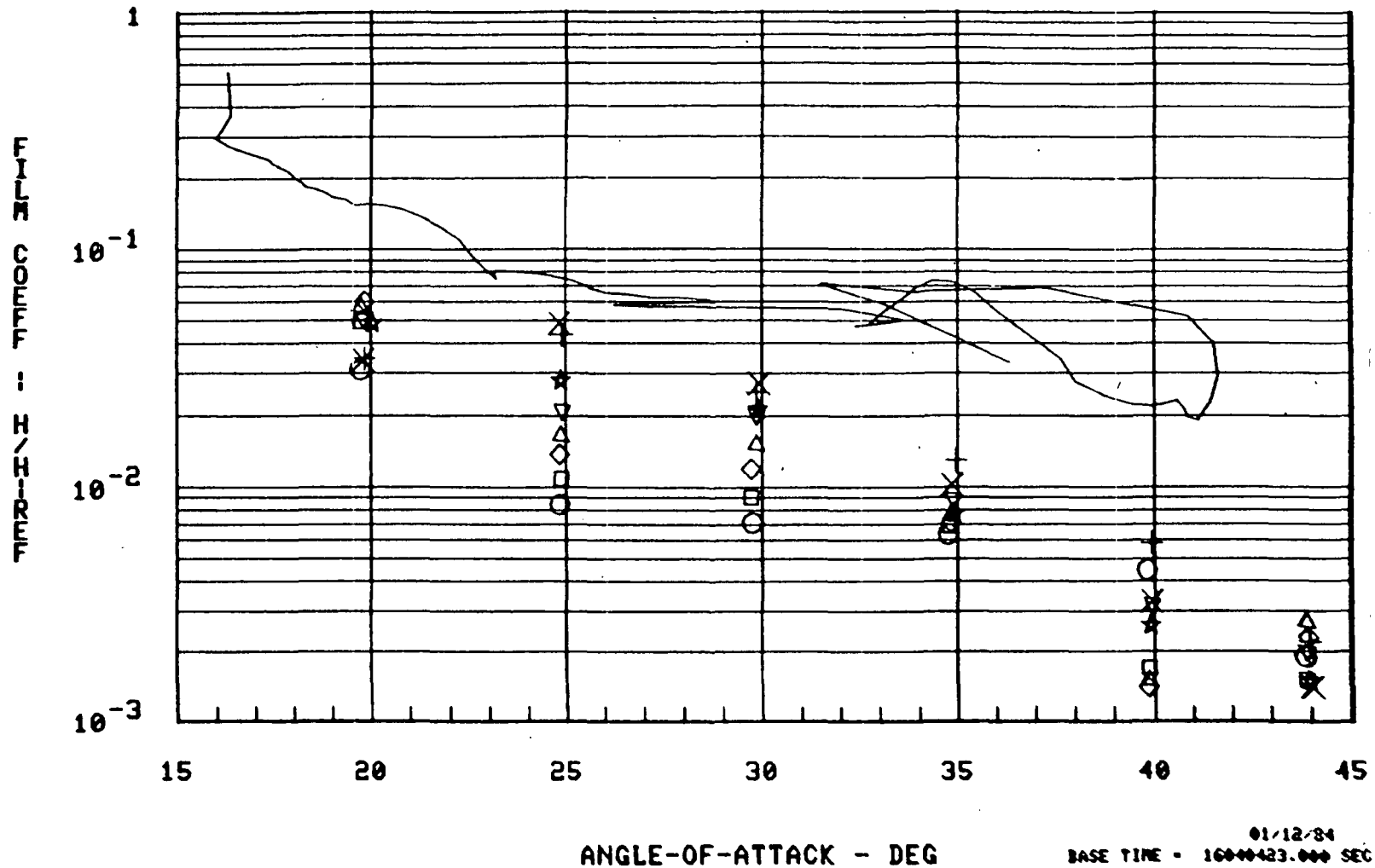
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.70$ ) $Z=440$

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
 OH74 0.0175 SCALE RE = 1.0 E06  
 OH74 0.0175 SCALE RE = 1.5 E06  
 OH74 0.0175 SCALE RE = 2.0 E06  
 OH74 0.0175 SCALE RE = 2.5 E06  
 OH74 0.0175 SCALE RE = 3.0 E06  
 OH74 0.0175 SCALE RE = 3.5 E06  
 OH74 0.0175 SCALE RE = 3.7 E06

U07T9925A/H-REF 965-1360 SEC



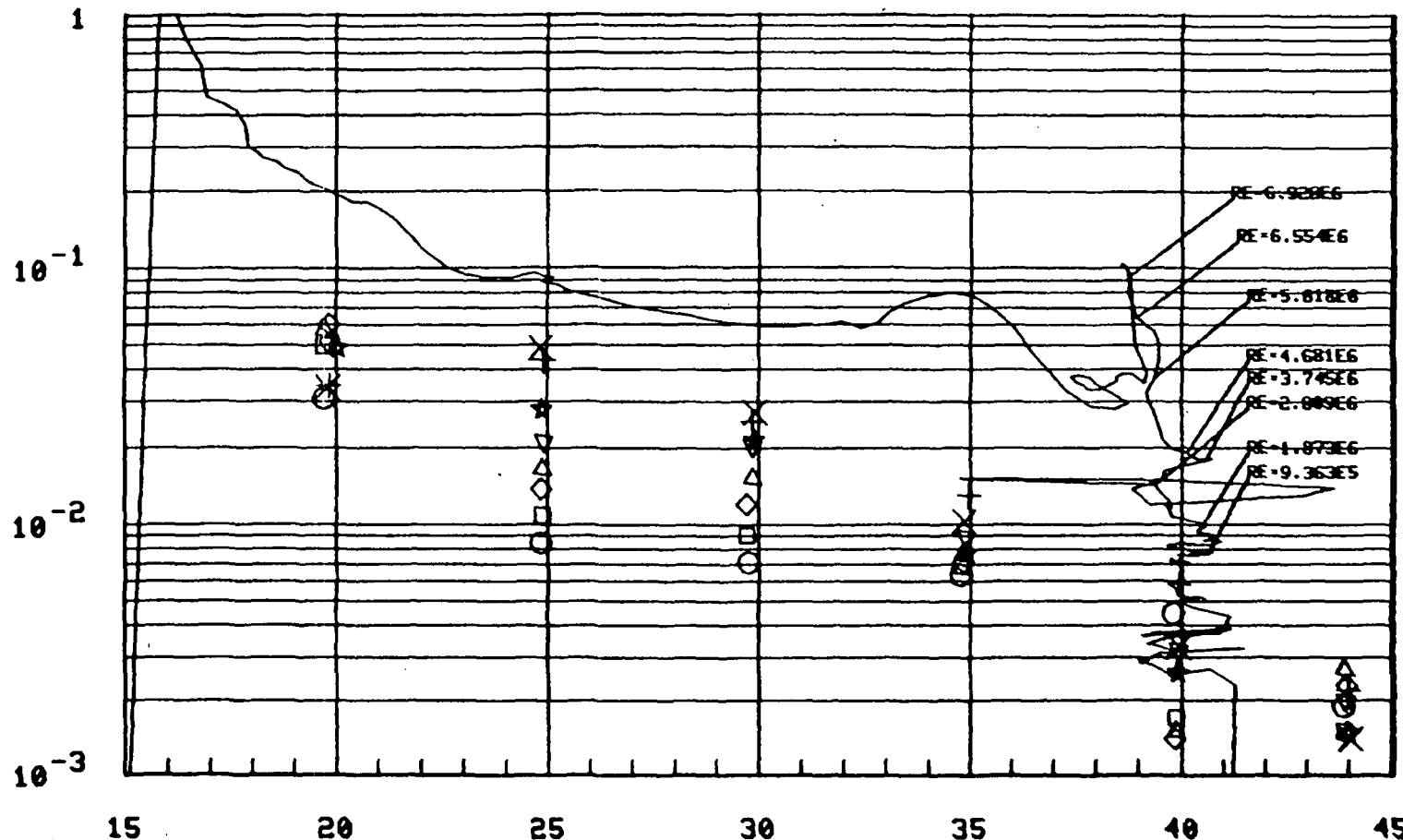
# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

○  
◇  
△  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9925A/H-REF 150-1430 SEC

LINE COUNT -- I/I-CALL

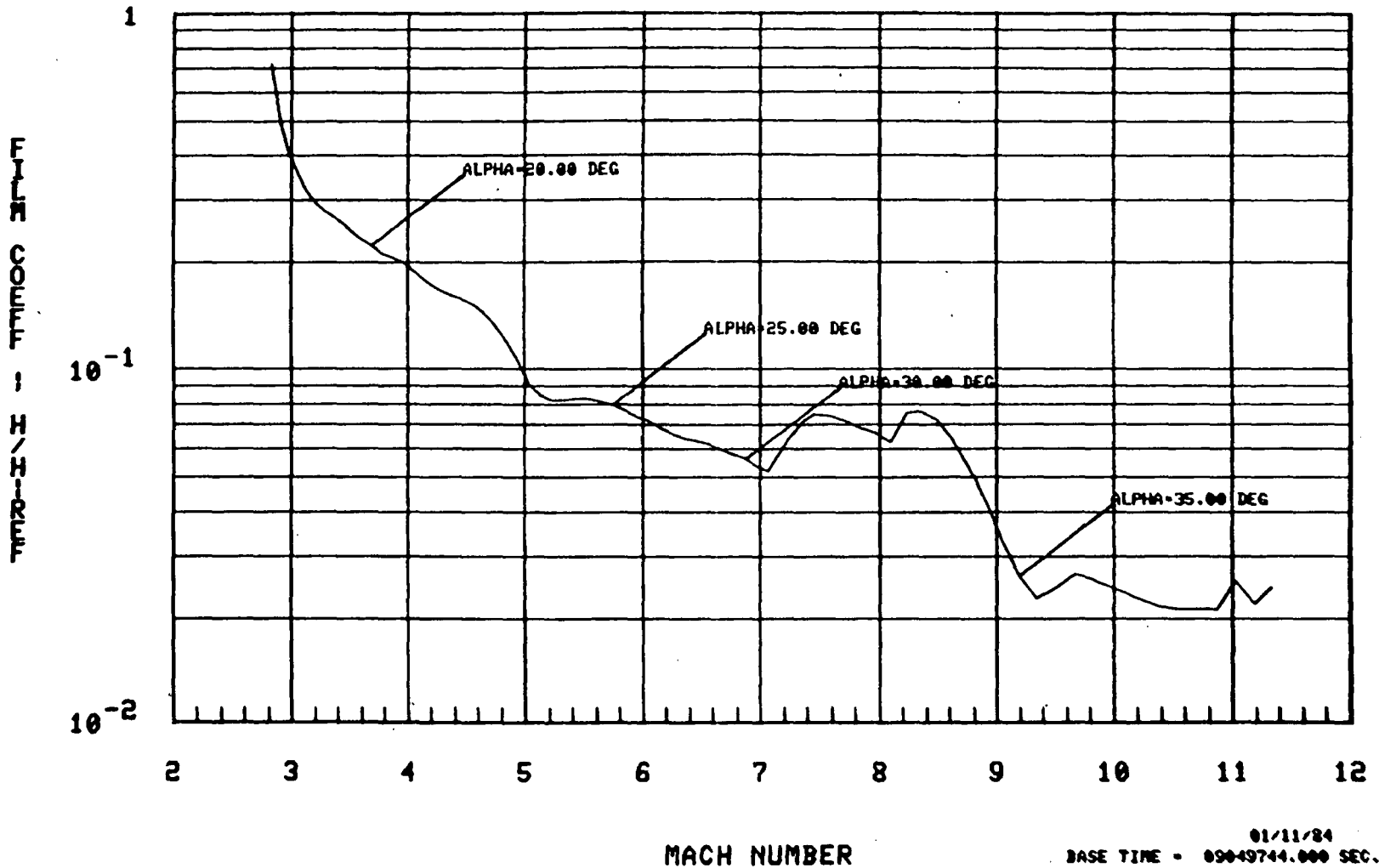


ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.

# STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

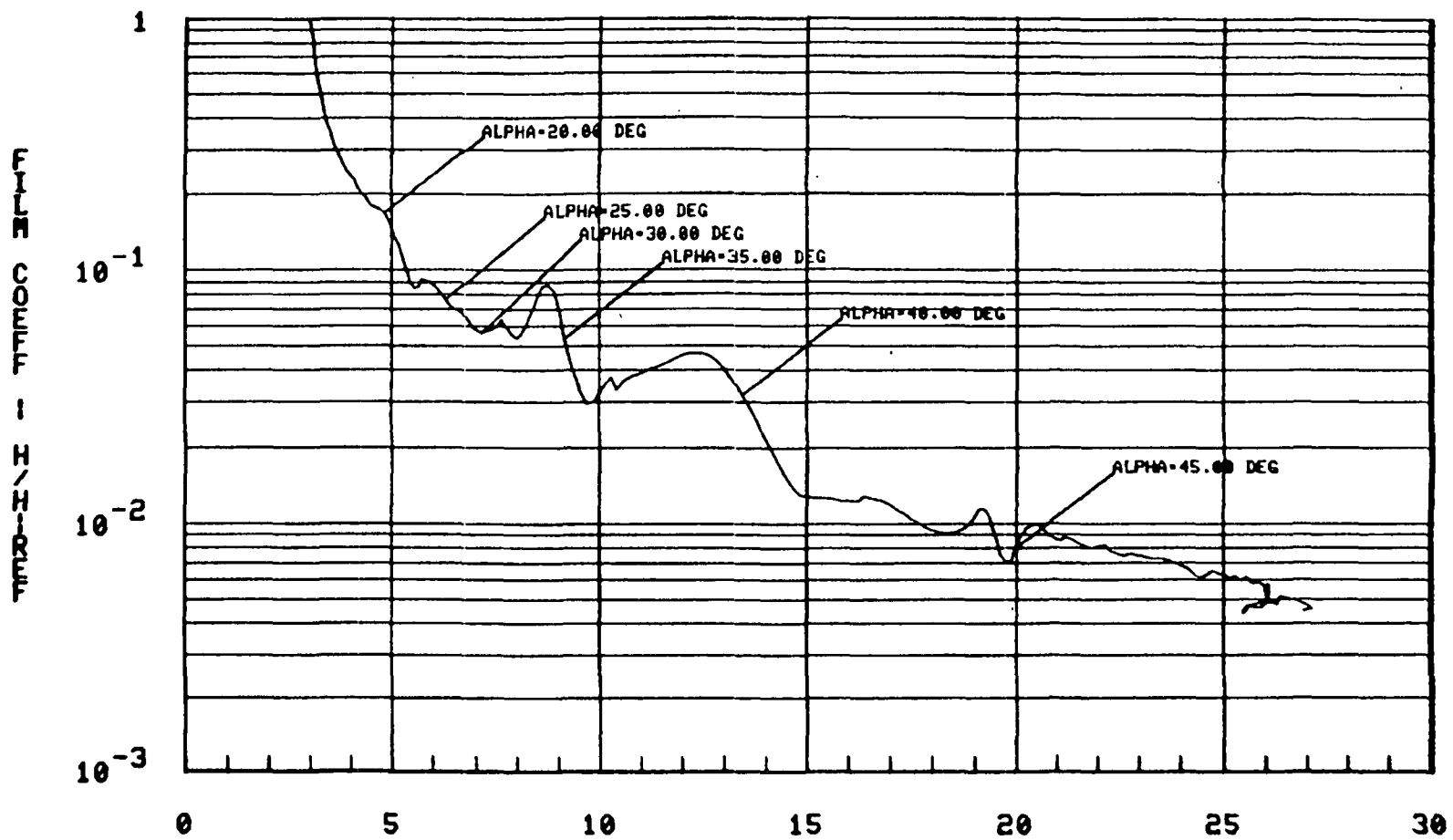
U07T9925A/H-REF 1065-1500 SEC



B-476

STS-2 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.70$ )  $Z=440$

U07T9925A/H-REF 200-1530 SEC



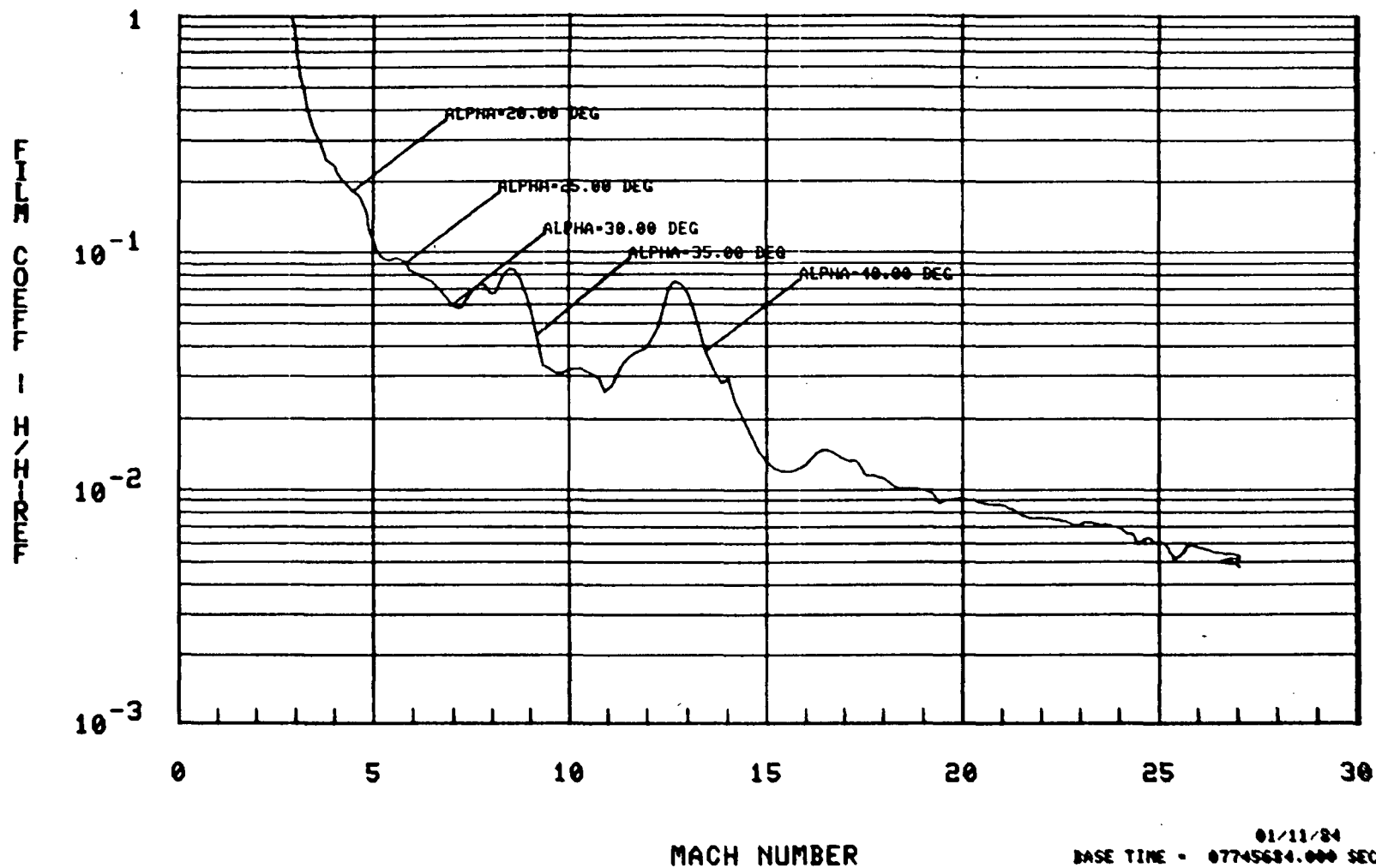
B-477

MACH NUMBER

01/11/84  
BASE TIME - 27550236.000 SEC.

STS-3 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.70$ )  $Z=440$

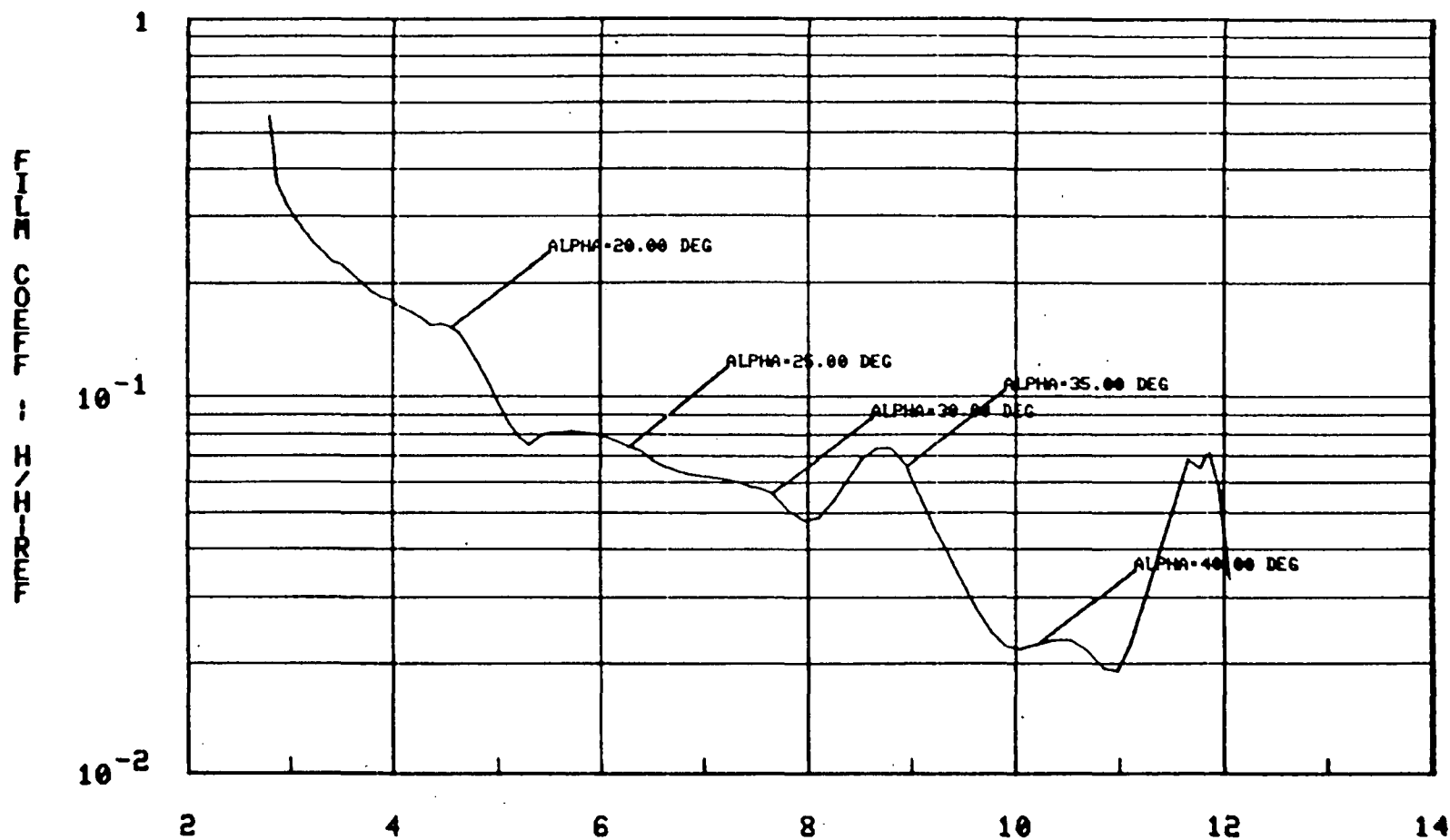
U07T9925A/H-REF 200-1440 SEC



B-478

STS-4 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.70$ )  $Z=440$

U07T9925A/H-REF 965-1360 SEC



B-479

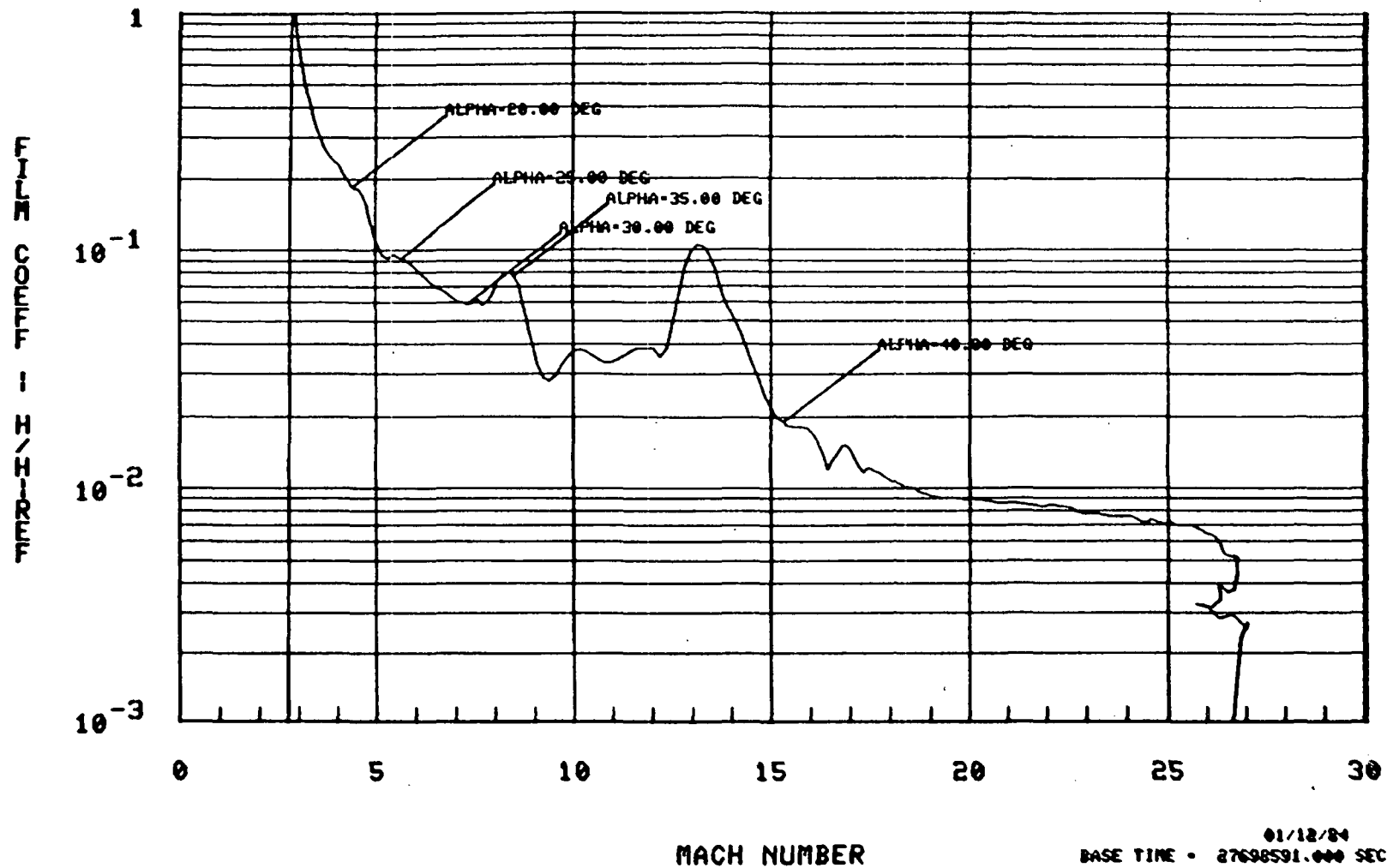
MACH NUMBER

01/12/84  
BASE TIME - 16000423.000 SEC.



STS-5 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.70$ )  $Z=440$

U07T9925A/H-REF 150-1430 SEC

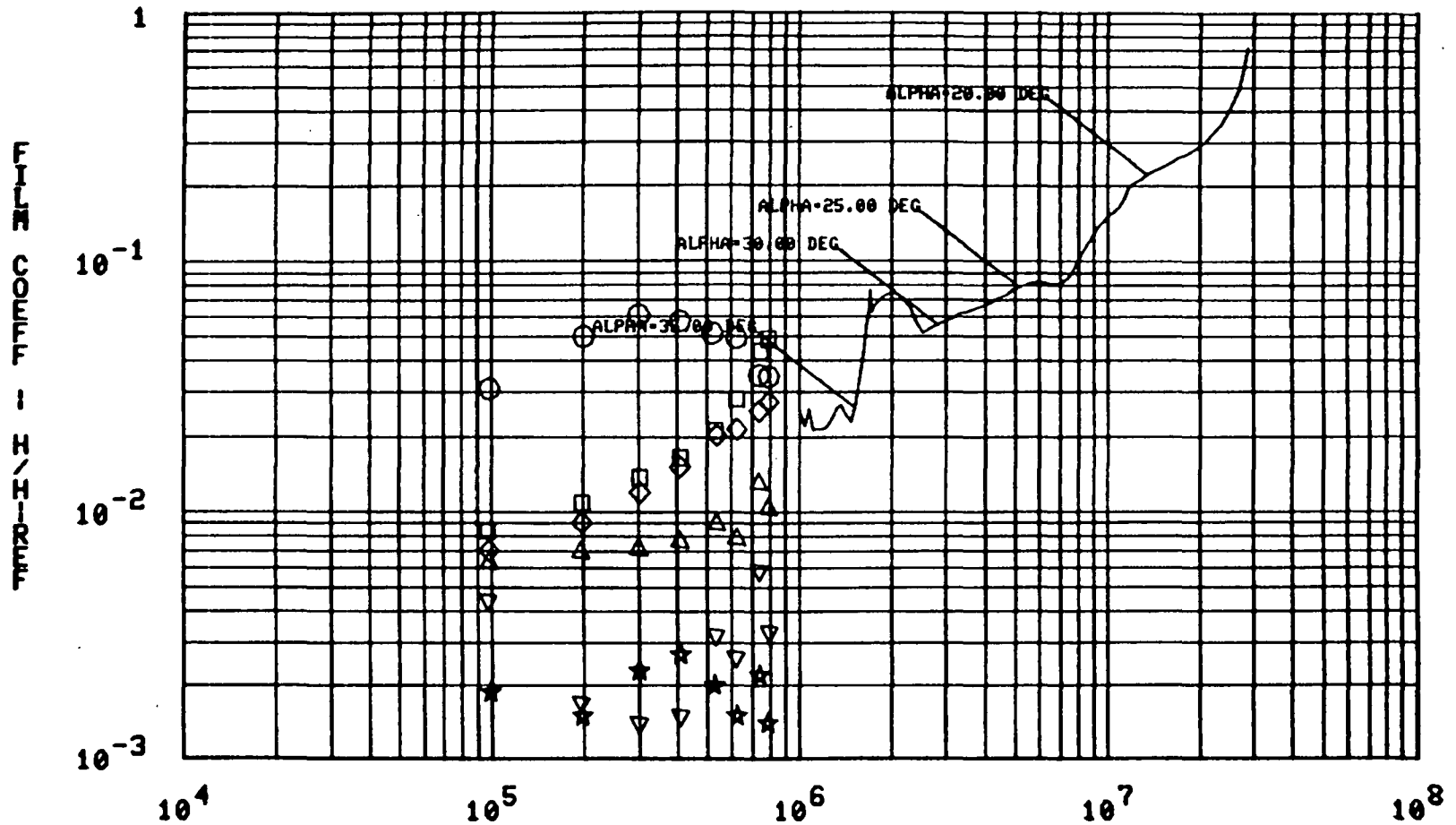


# STS-1 (107 FT LENGTH SIDE PLB DOOR $X/L=0.70$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9925A/H-REF 1065-1500 SEC



B-481

REYNOLDS NUMBER (NS)

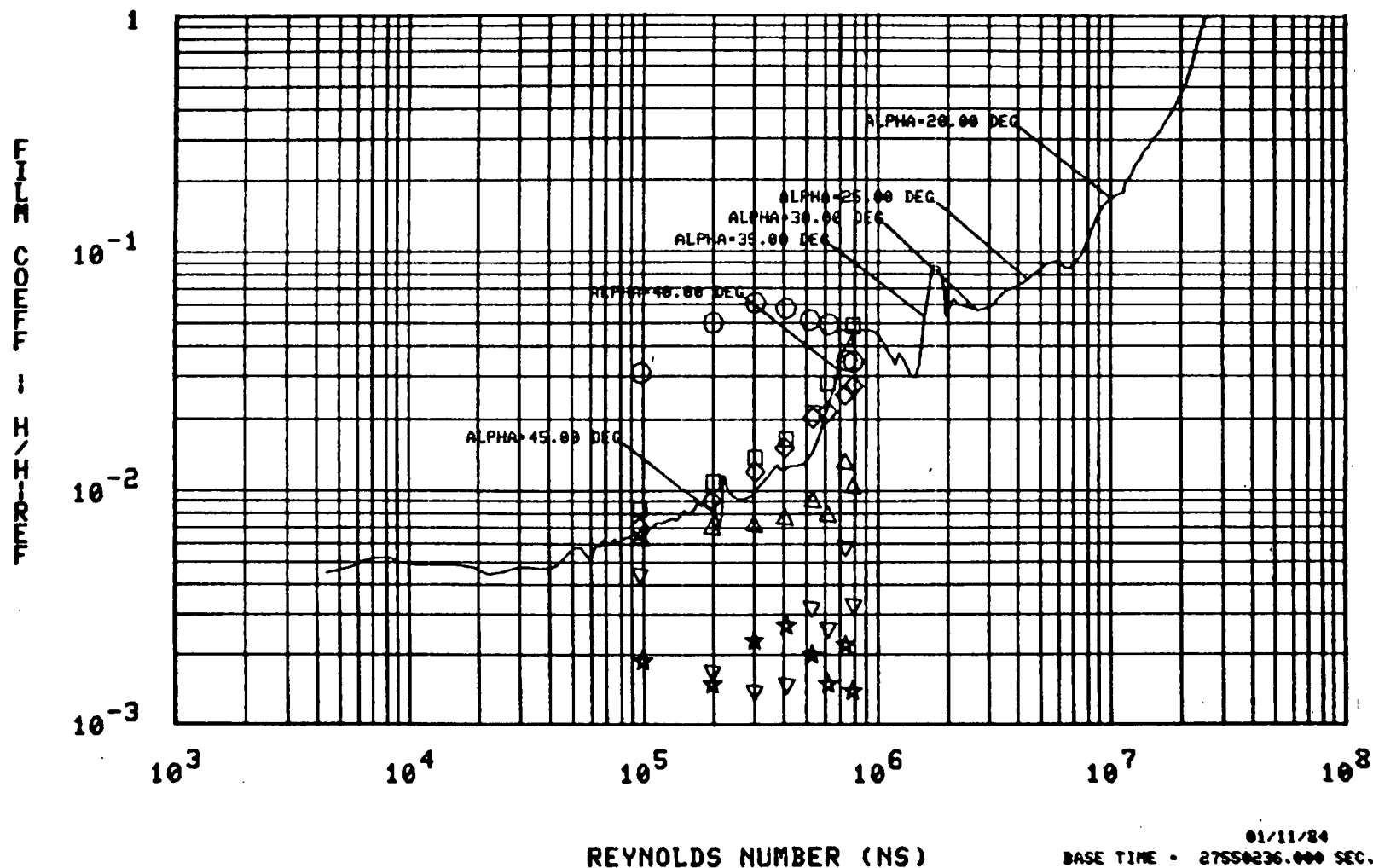
01/11/84  
BASE TIME = 09049744.000 SEC.

# STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9925A/H-REF 200-1530 SEC

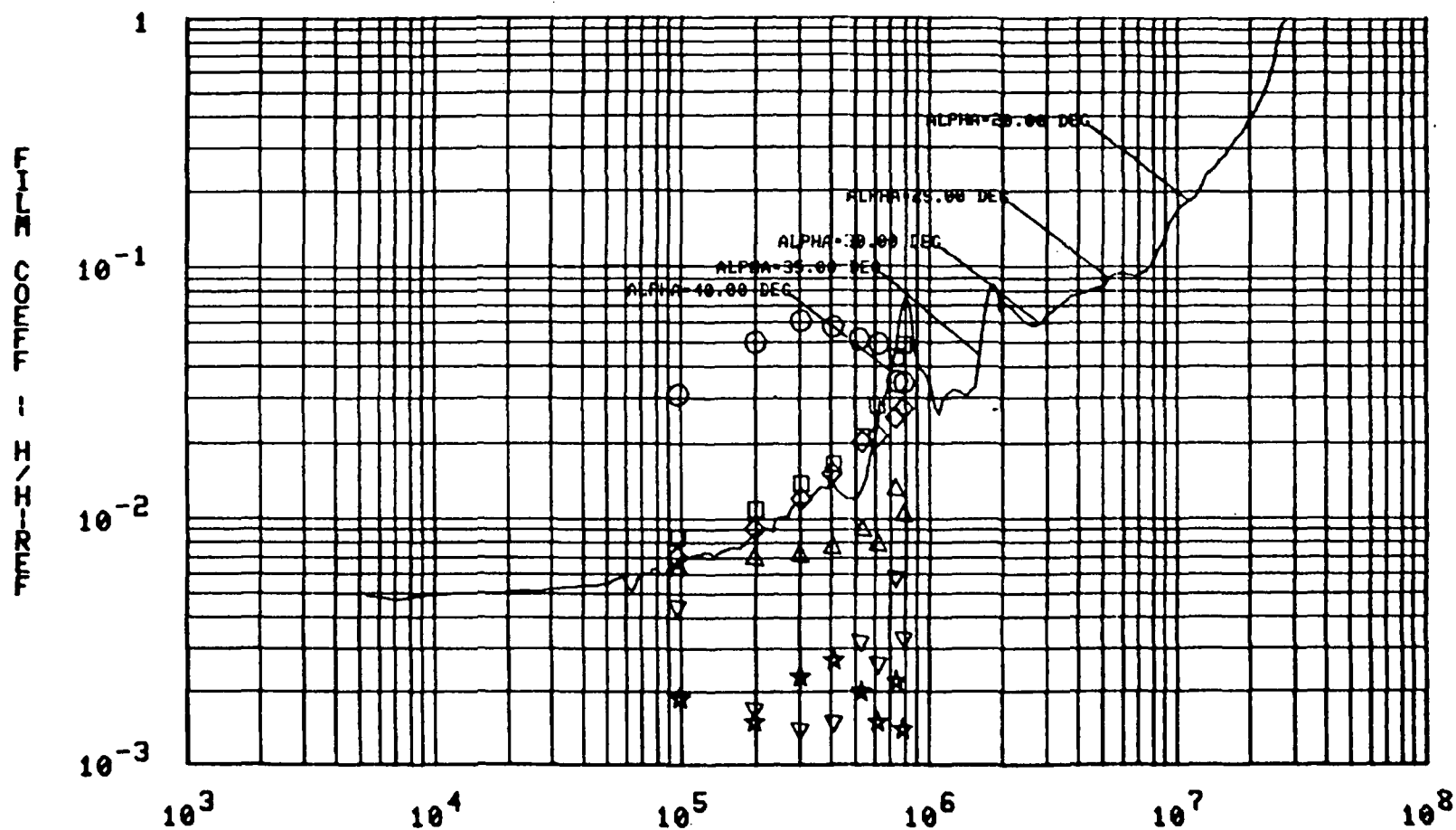


# STS-3 (107 FT LENGTH SIDE PLB DOOR $X/L=0.70$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9925A/H-REF 200-1440 SEC



REYNOLDS NUMBER (NS).

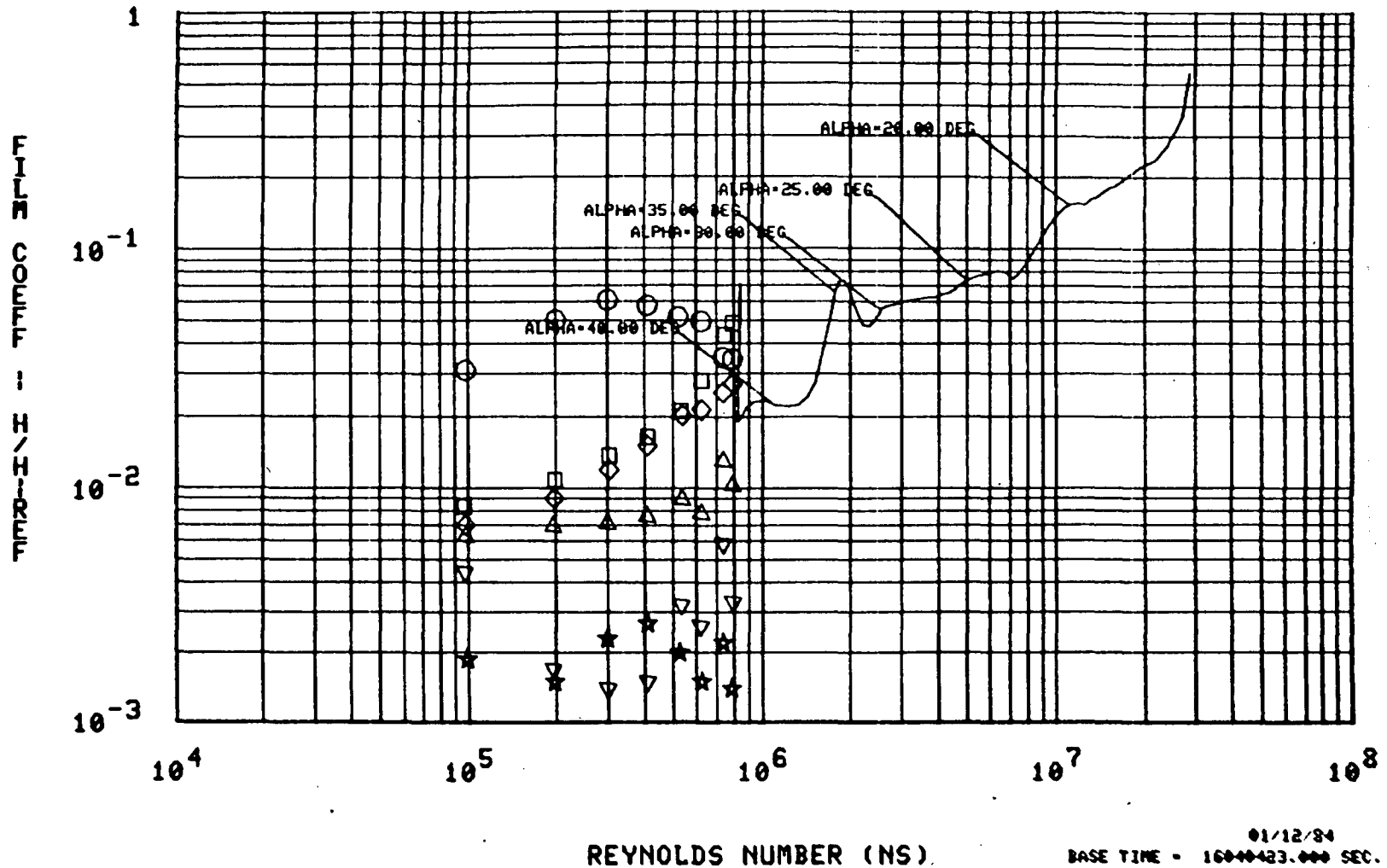
01/11/84  
BASE TIME = 07745684.000 SEC.

# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.70$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9925A/H-REF 965-1360 SEC

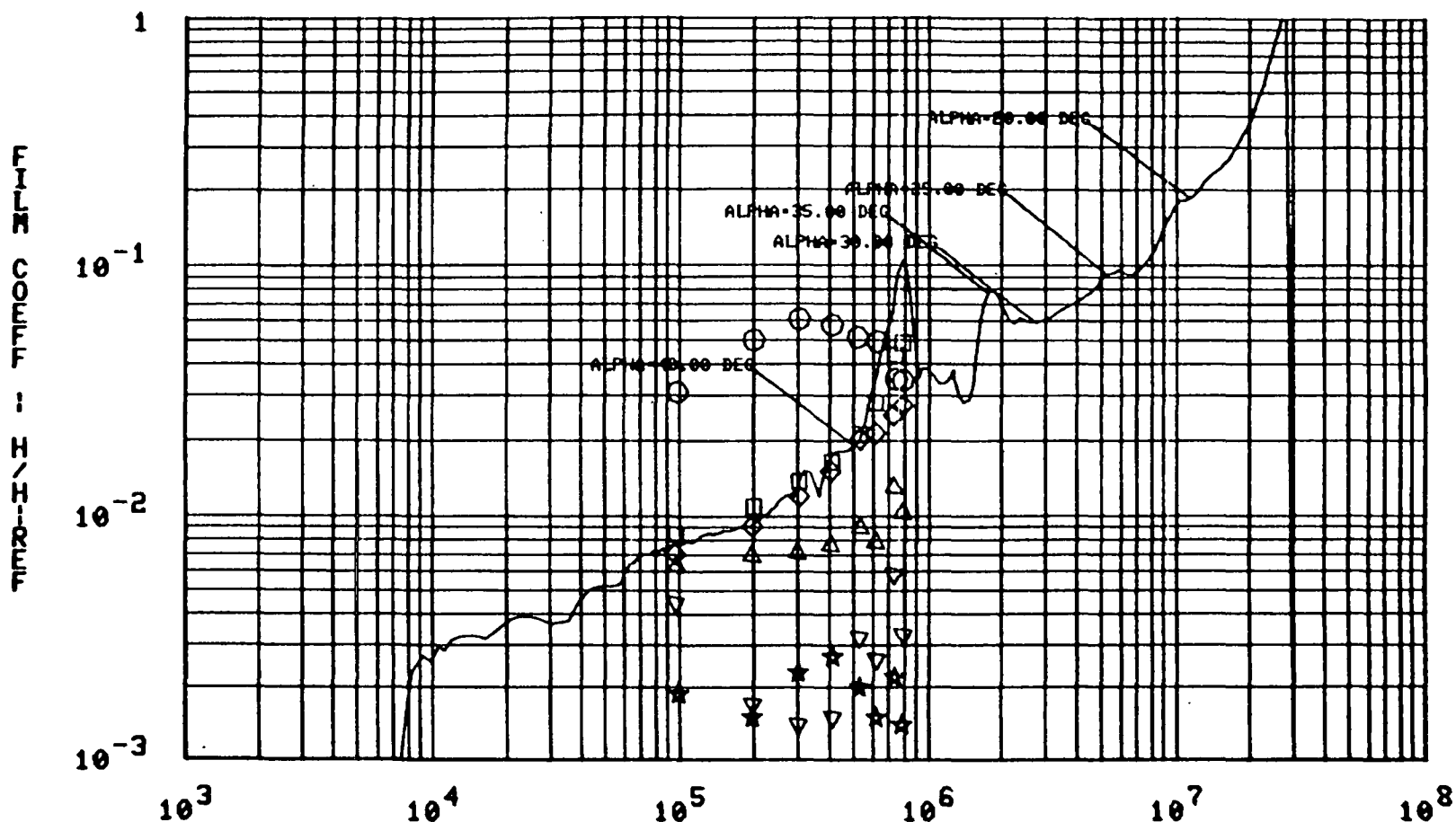


# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9925A/H-REF 150-1430 SEC

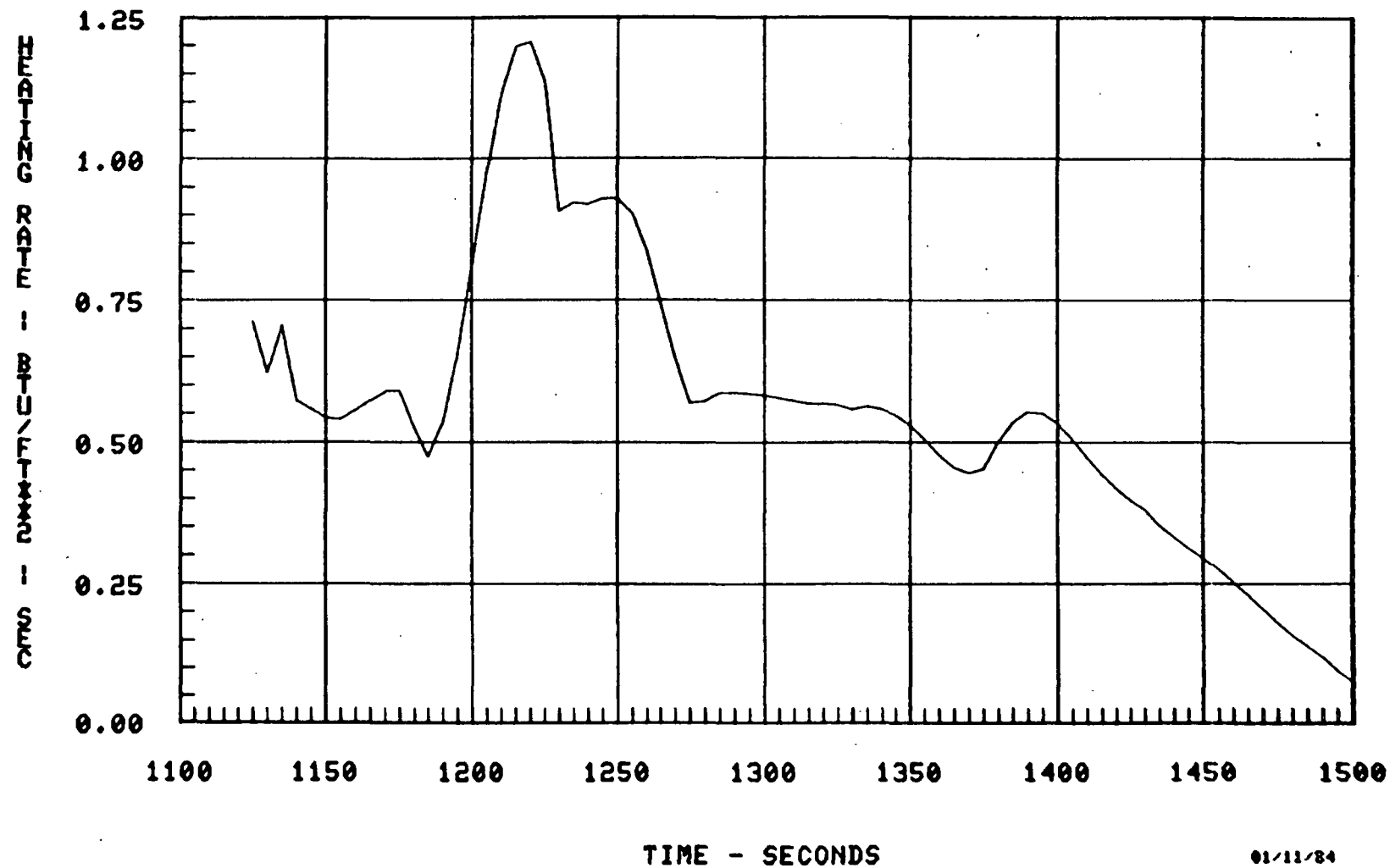


REYNOLDS NUMBER (NS)

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U07T9925A

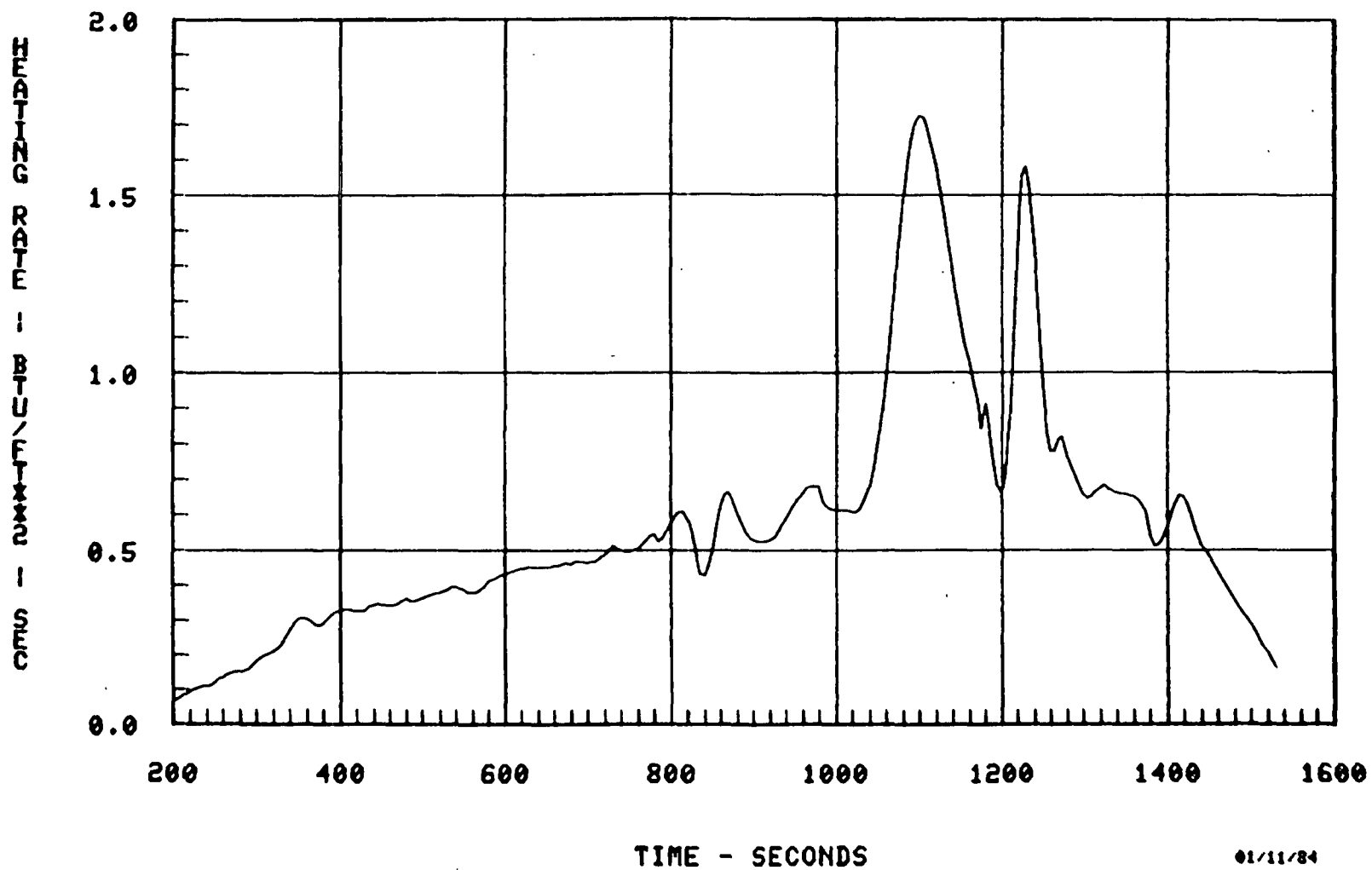


B-486

01/11/84

STS-2 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.70$ )  $Z=440$

U07T9925A



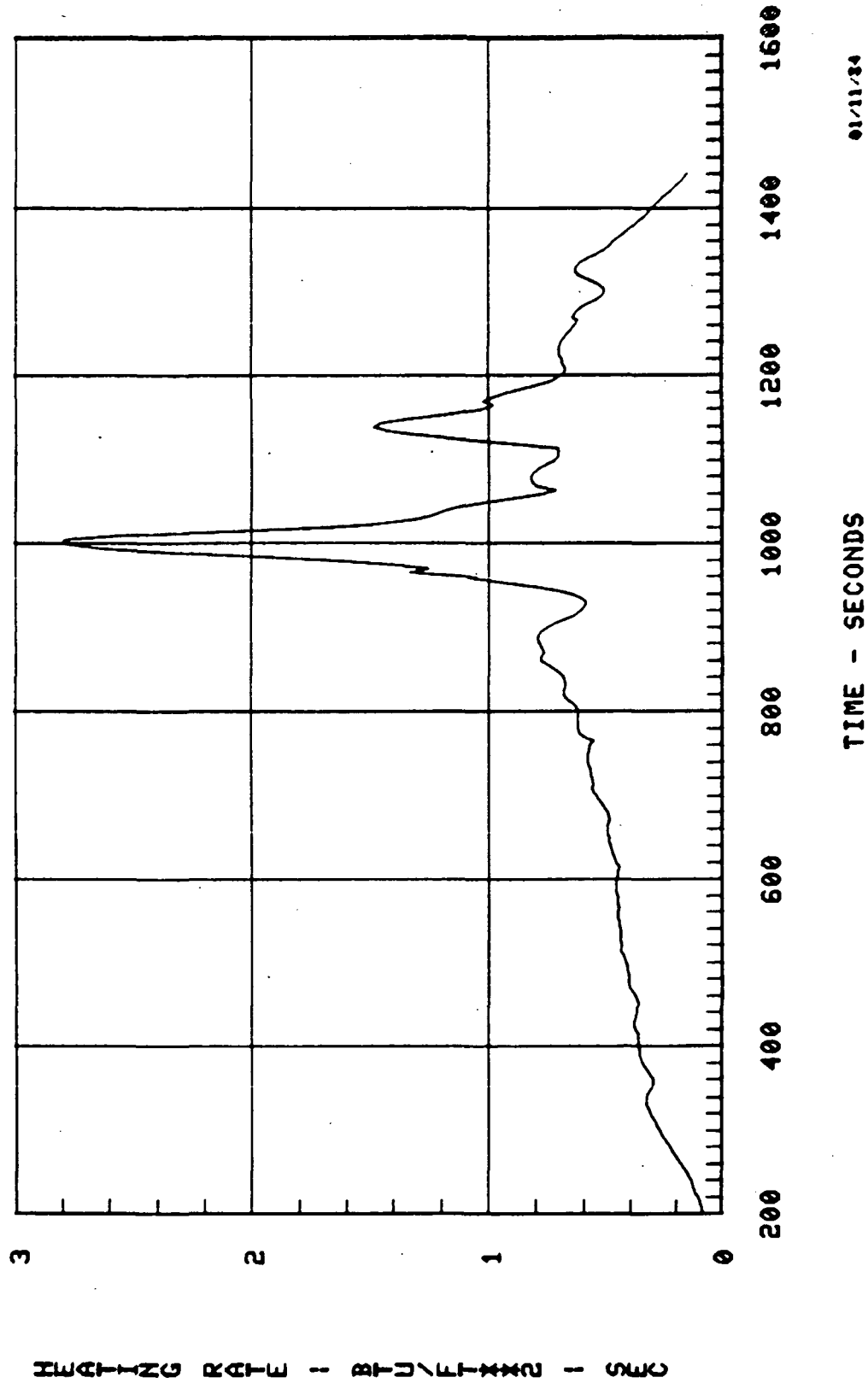
B-487

01/11/84



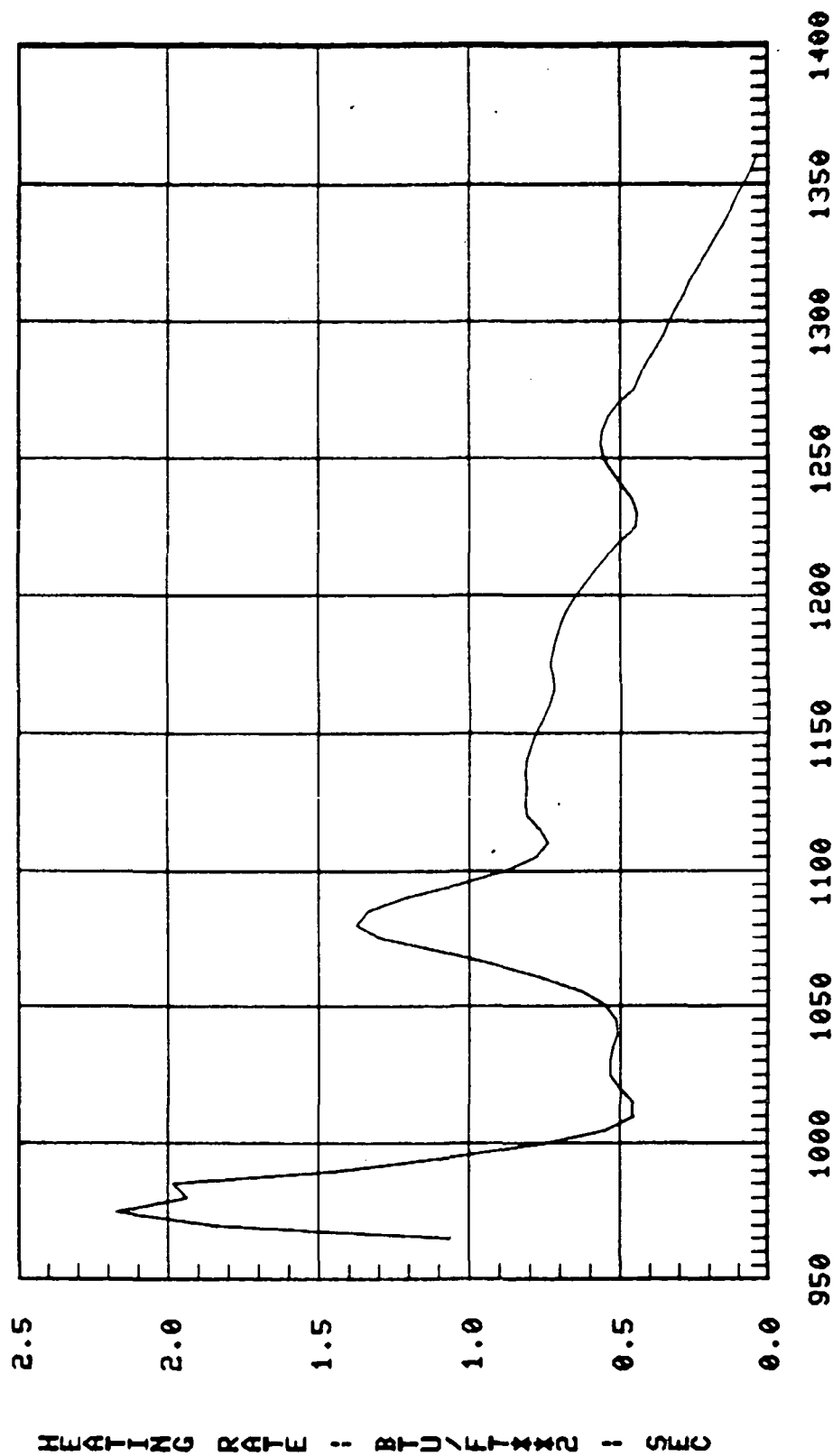
STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U0719925A



STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U07T9925A

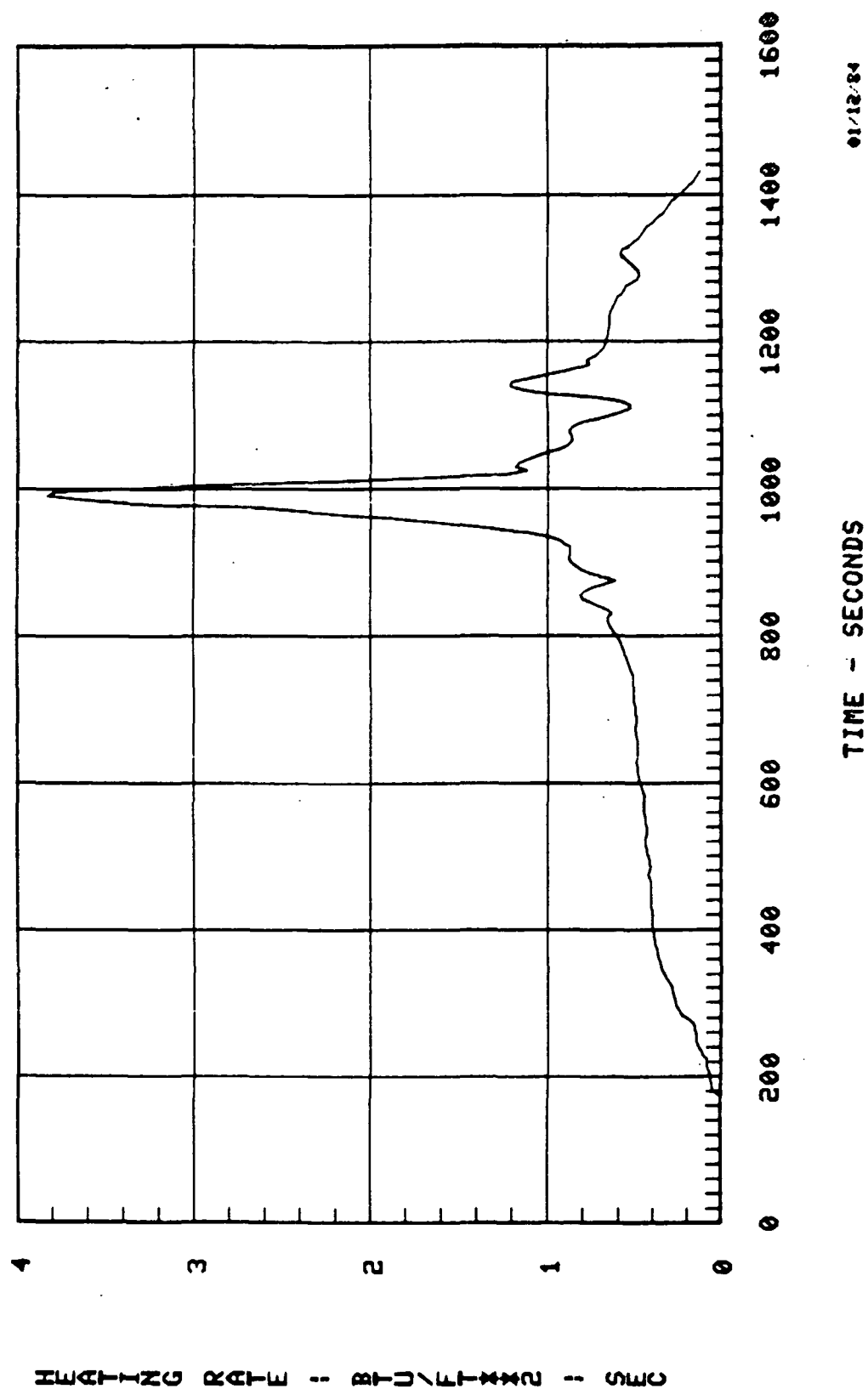


TIME - SECONDS

01/12/84

STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

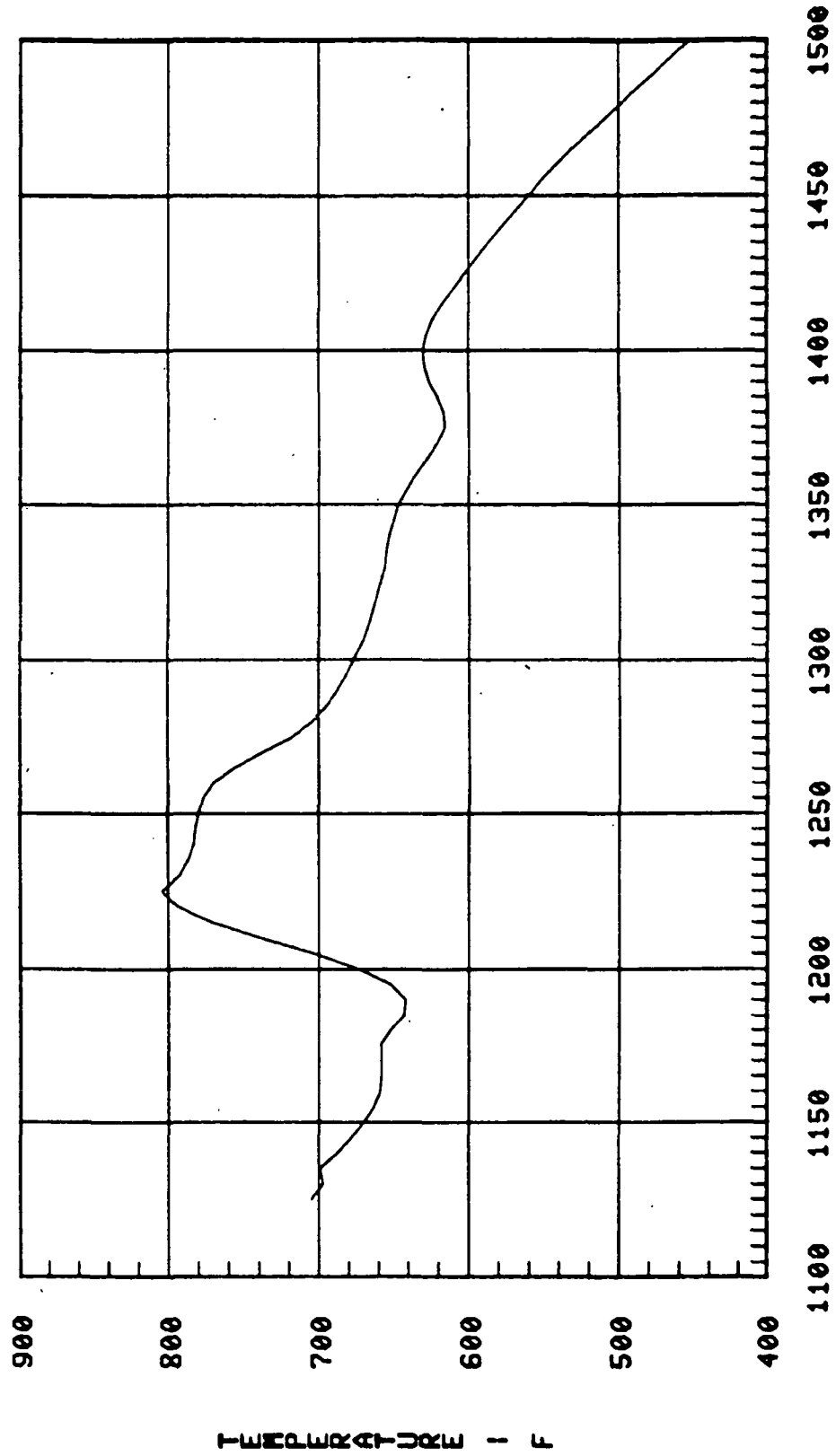
U07T9925A



01/12/84

STS-1 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U87T9925A

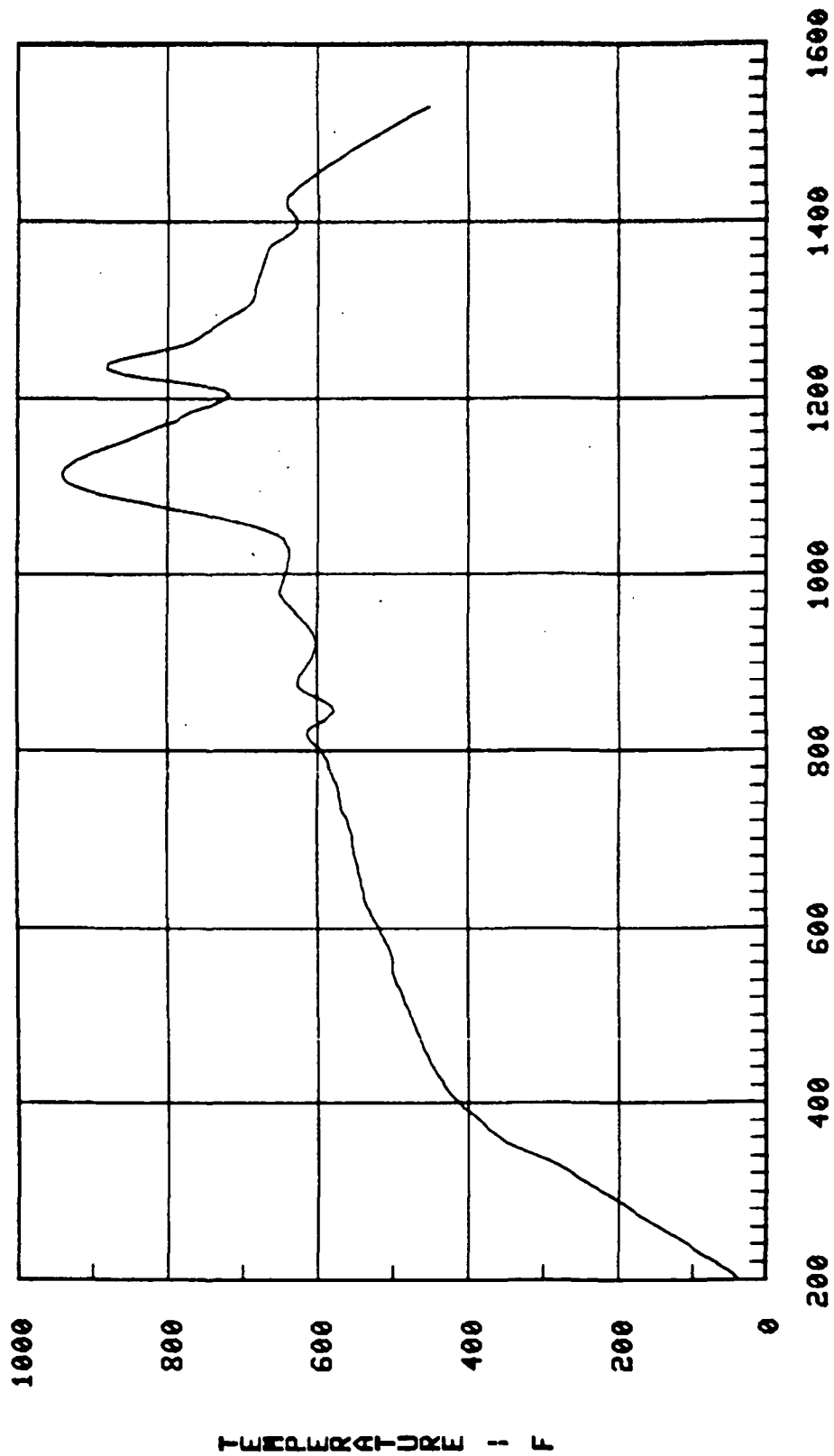


TIME - SECONDS

01/11/84

STS-2 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U077925A

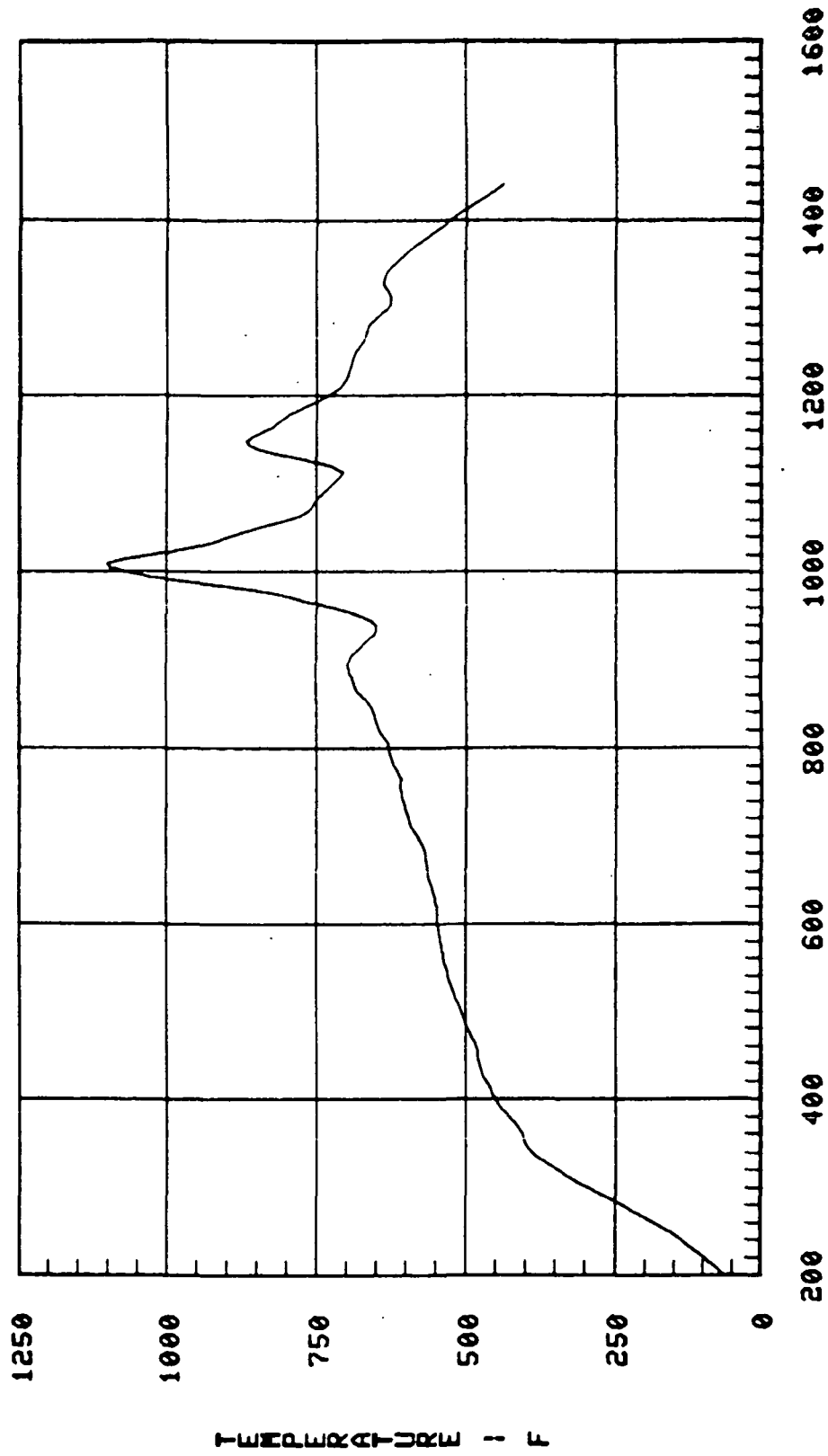


TIME - SECONDS

01/11/84

STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U07T9925A

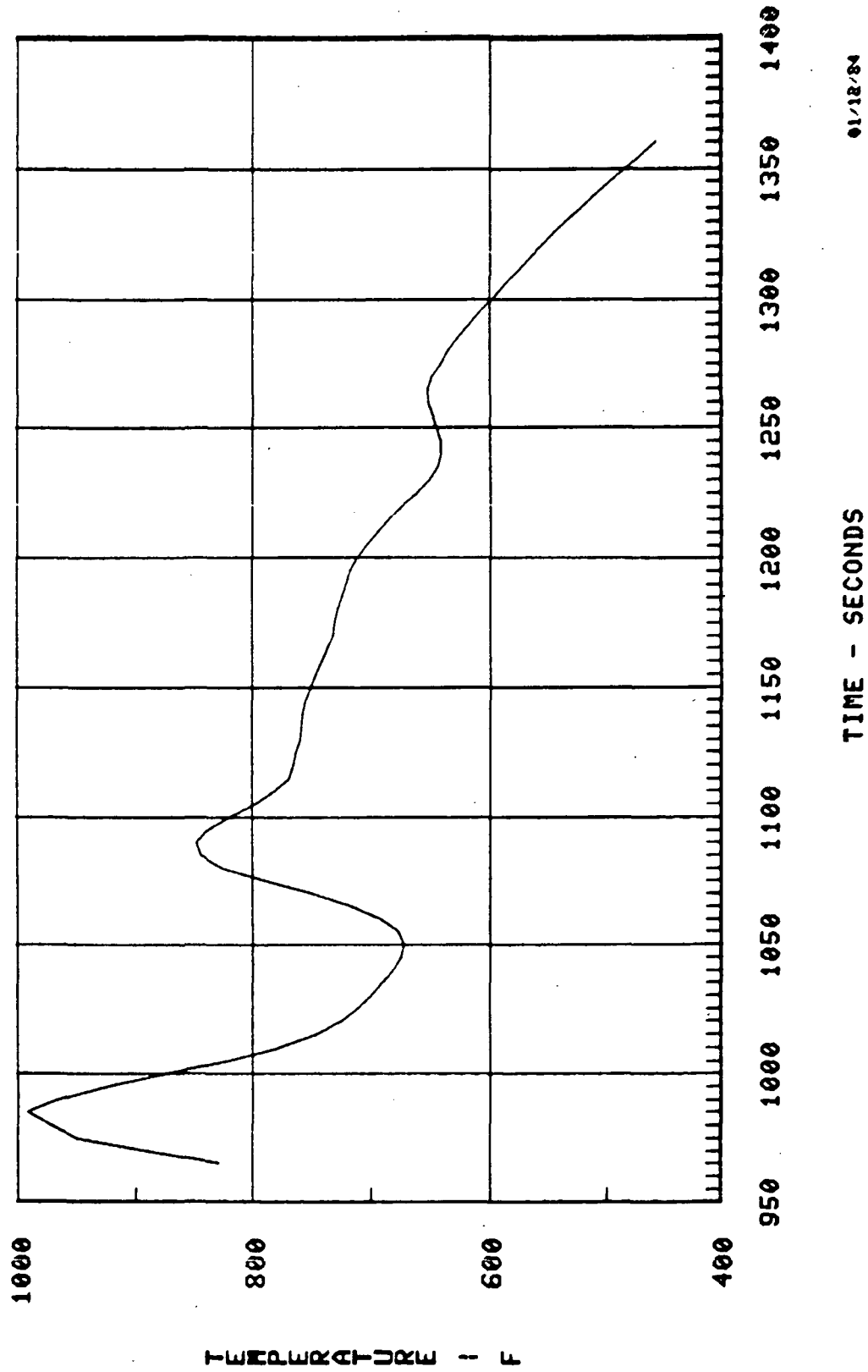


01/11/84

TIME - SECONDS

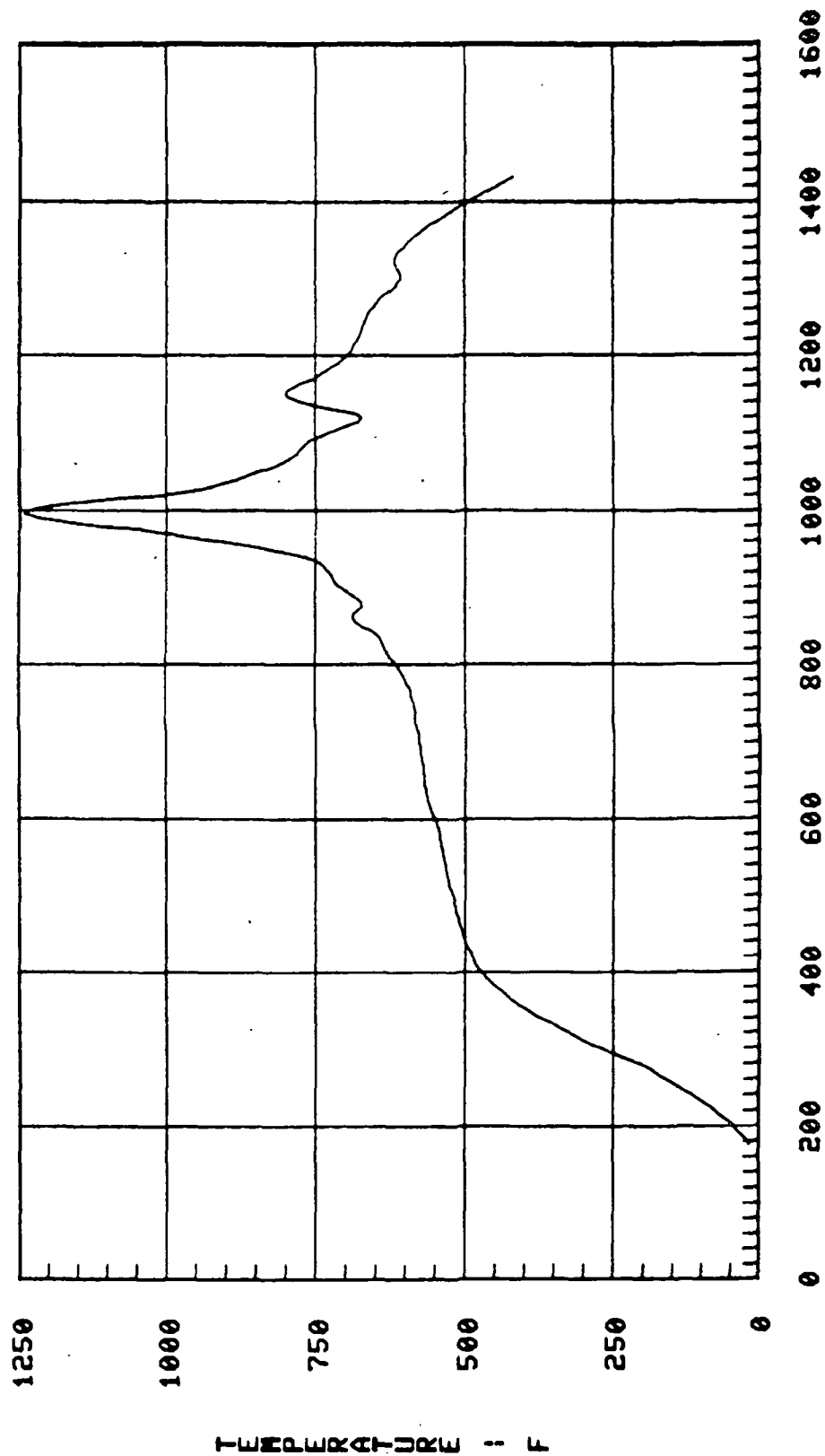
STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U07T9925A



STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.70) Z=440

U07T9925A



TIME - SECONDS

01/12/84

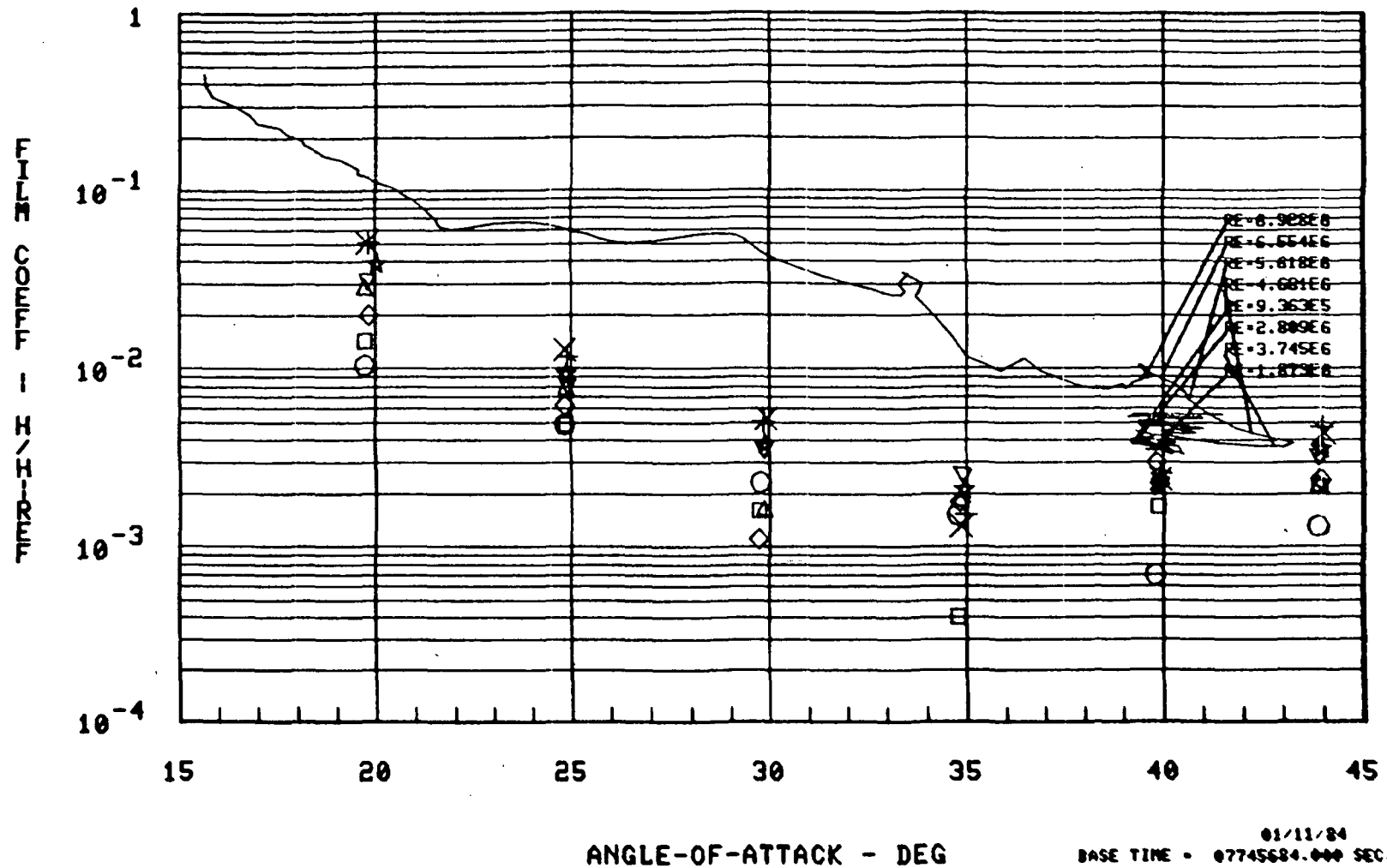


# STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.80) Z=440

O  
□  
△  
▽  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9926A/H-REF 200-1440 SEC

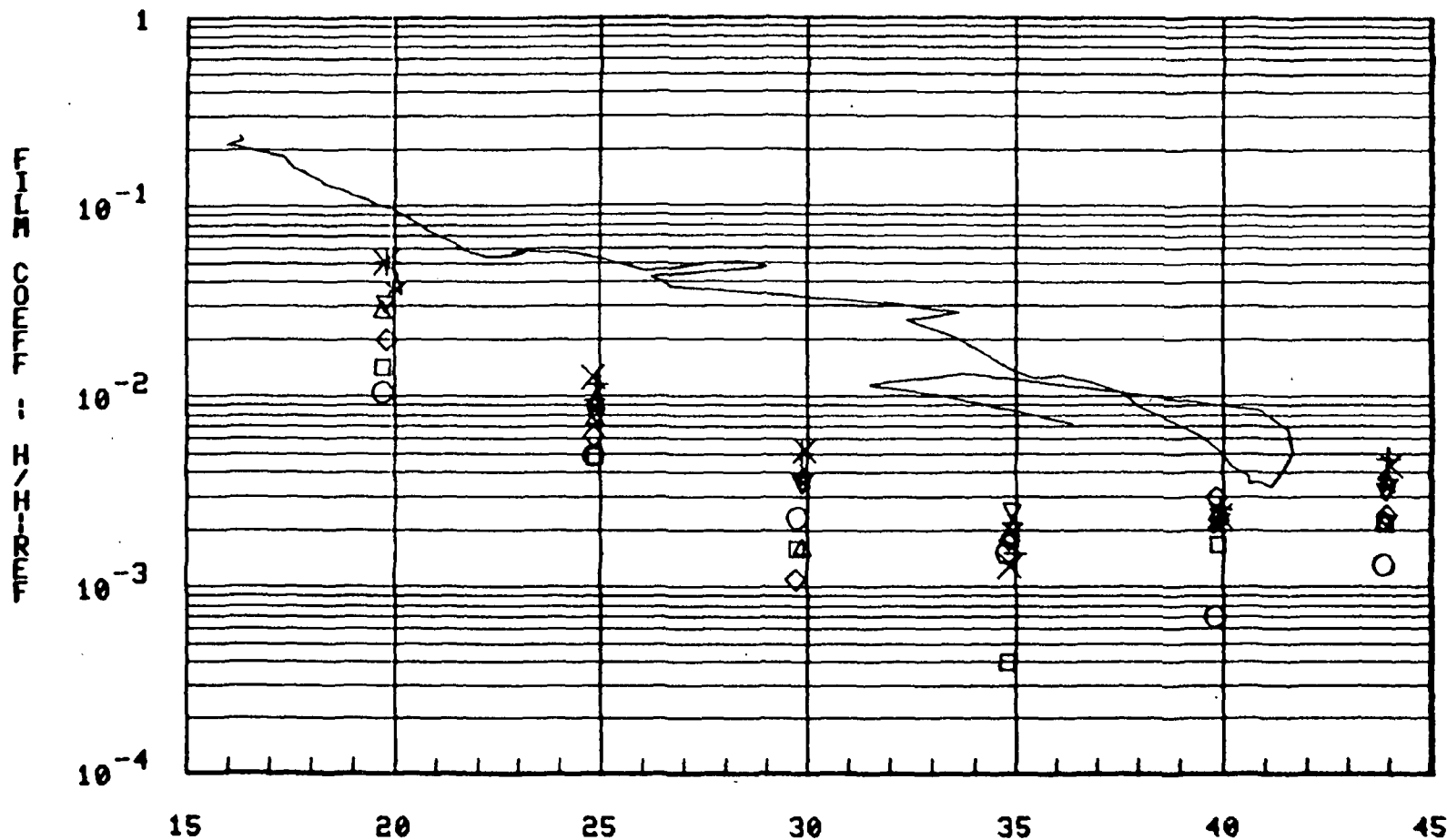


STS-4 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.80$ )  $Z=440$

○  
□  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9926A/H-REF 965-1360 SEC



B-497

ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 16040423.000 SEC.

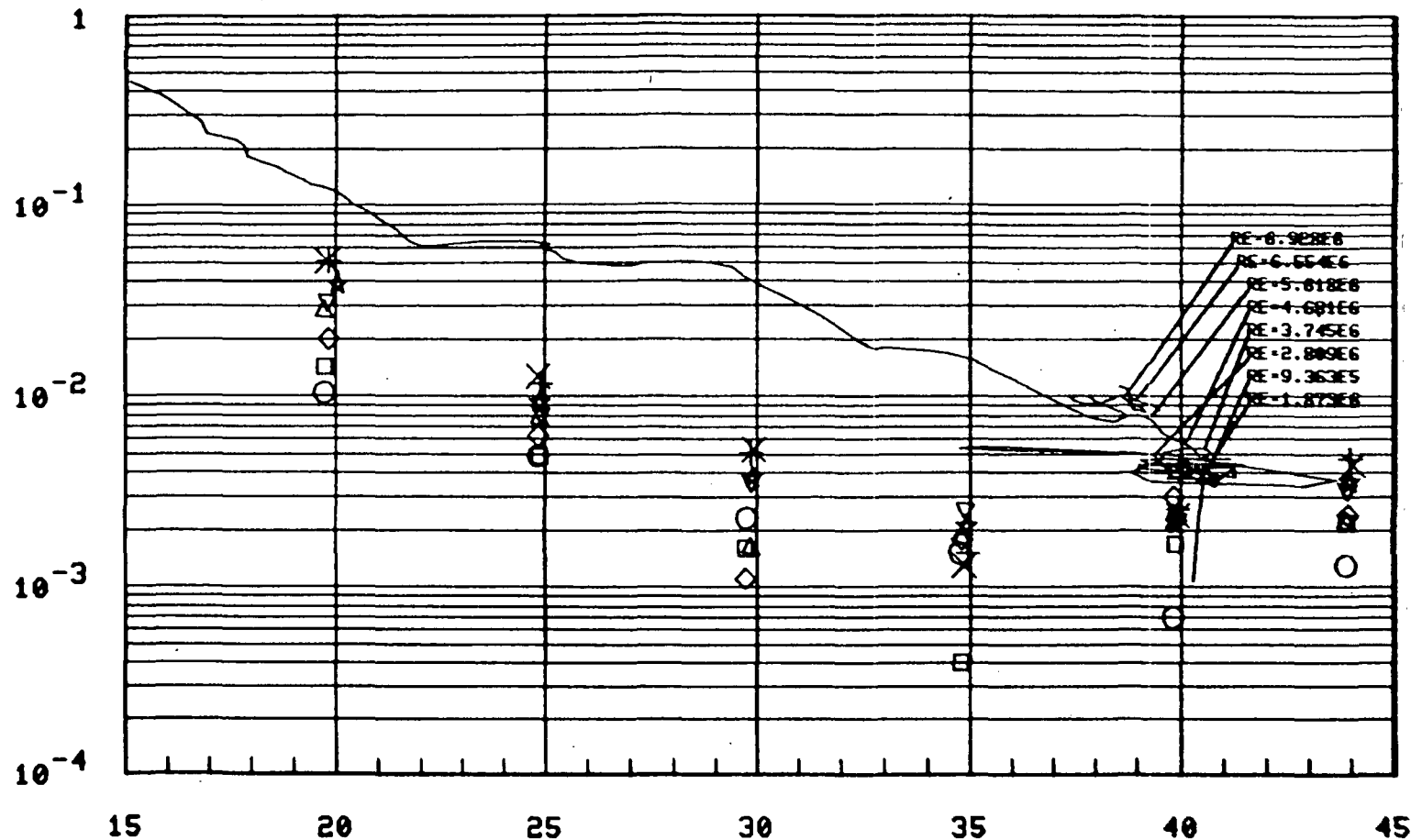
# STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.80) Z=440

O  
◇  
△  
▽  
★  
+  
X

OH74 0.0175 SCALE RE = 0.5 E06  
OH74 0.0175 SCALE RE = 1.0 E06  
OH74 0.0175 SCALE RE = 1.5 E06  
OH74 0.0175 SCALE RE = 2.0 E06  
OH74 0.0175 SCALE RE = 2.5 E06  
OH74 0.0175 SCALE RE = 3.0 E06  
OH74 0.0175 SCALE RE = 3.5 E06  
OH74 0.0175 SCALE RE = 3.7 E06

U07T9926A/H-REF 150-1430 SEC

LINE CODE - H/H-CALL

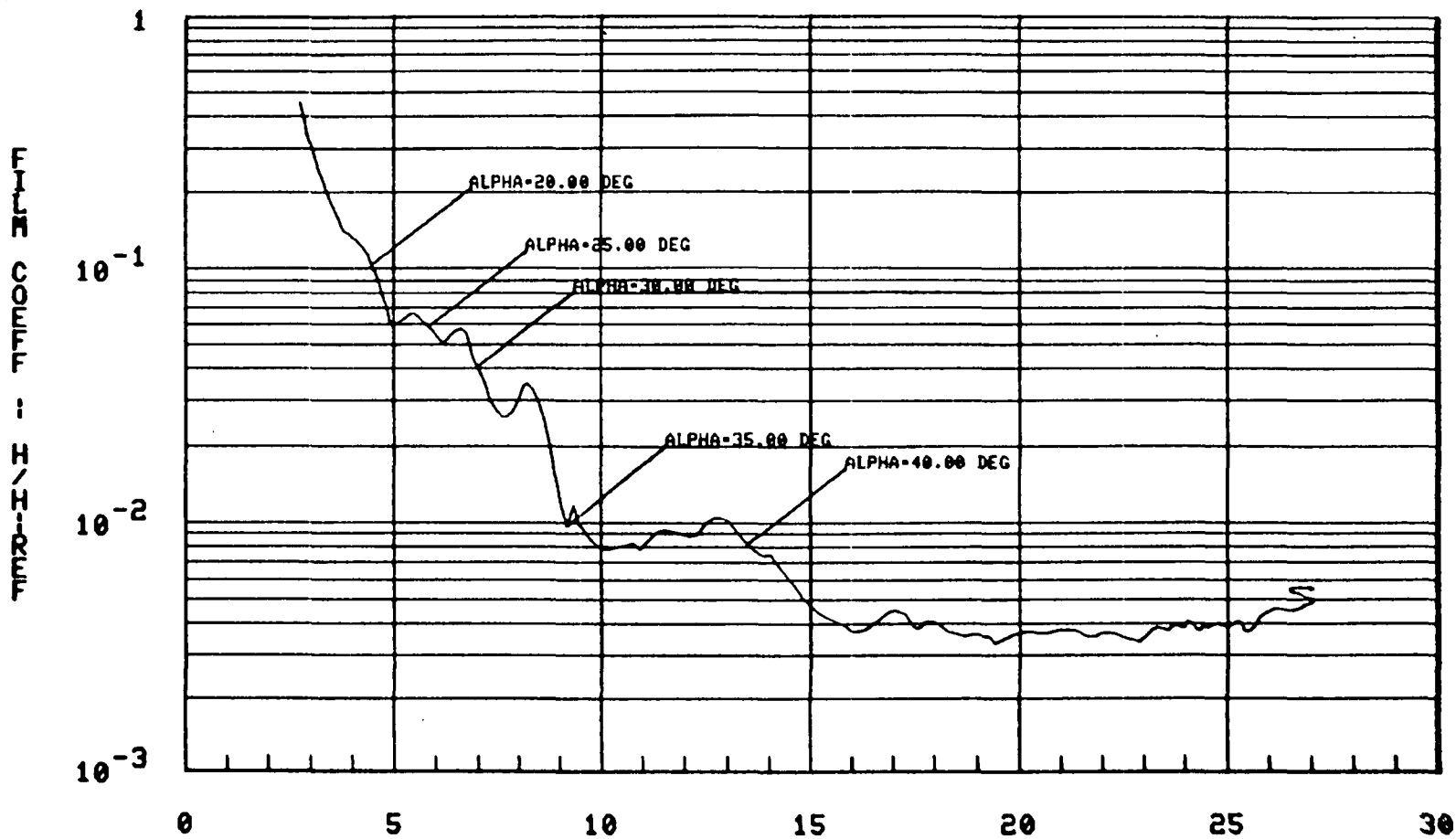


ANGLE-OF-ATTACK - DEG

01/12/84  
BASE TIME = 27698591.000 SEC.

STS-3 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.80$ )  $Z=440$

U07T9926A/H-REF 200-1440 SEC



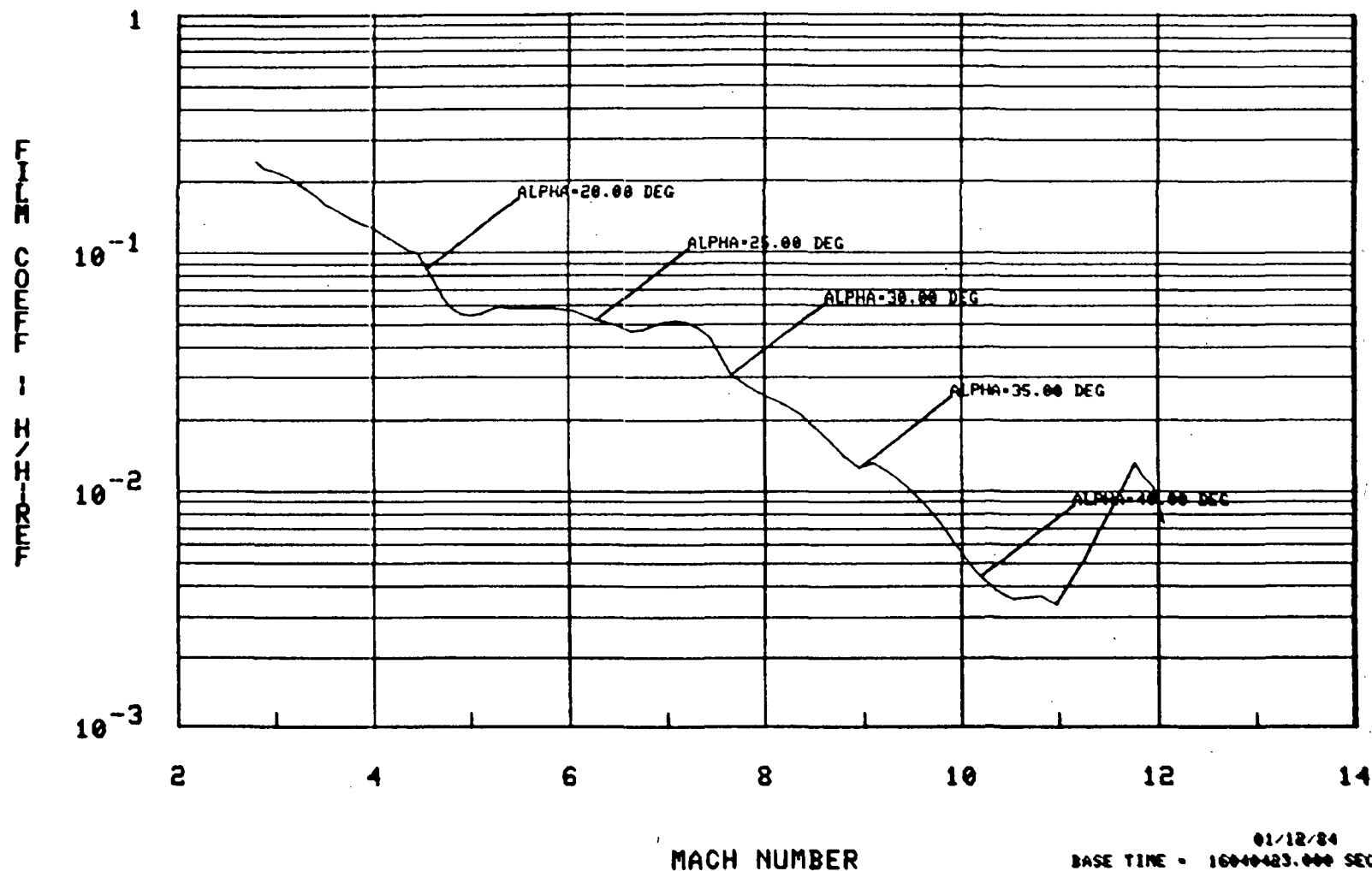
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01/11/84  
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B-499

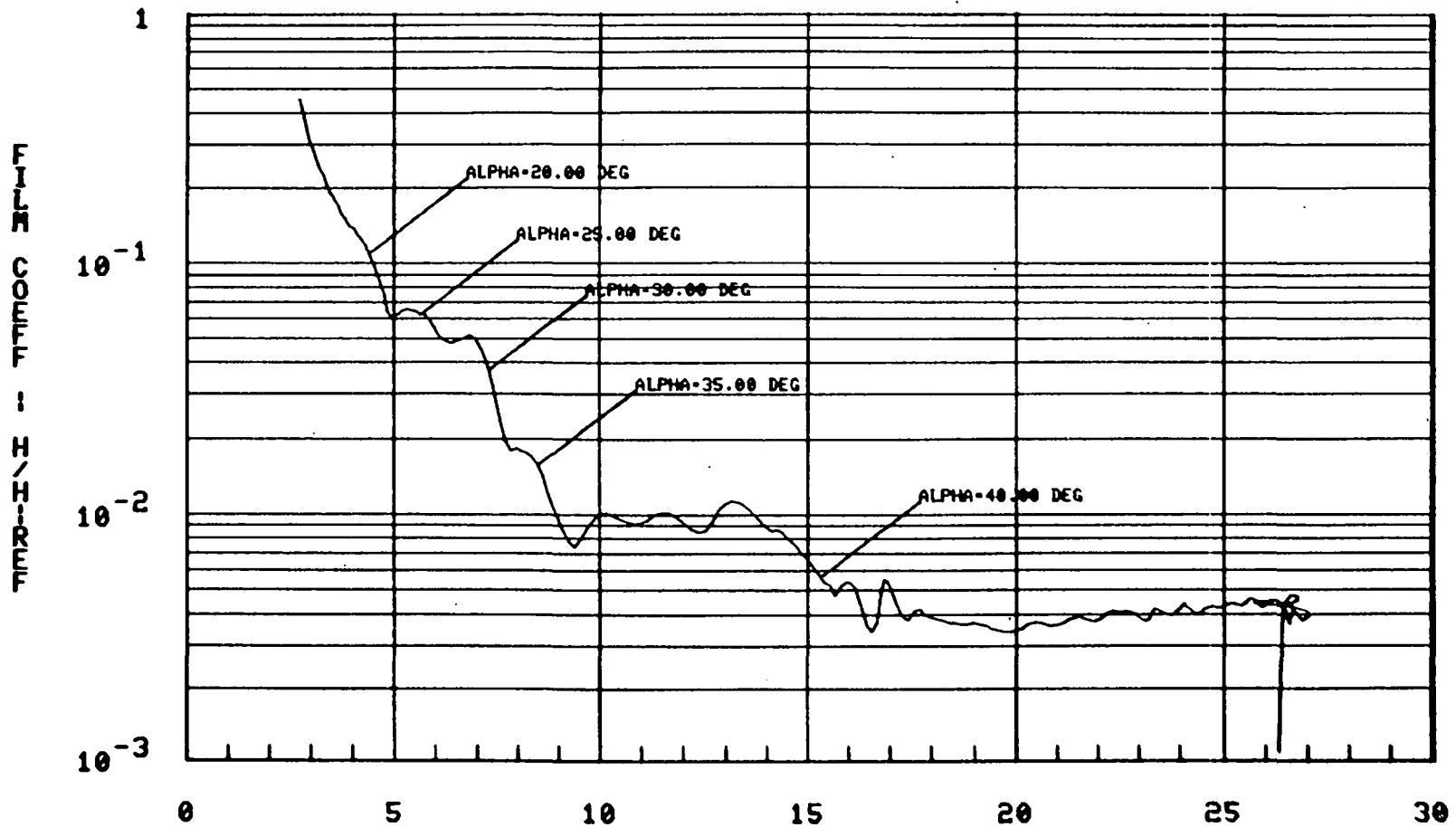
STS-4 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.80$ )  $Z=440$

U07T9926A/H-REF 965-1360 SEC



STS-5 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.80$ )  $Z=440$

U07T9926A/H-REF 150-1430 SEC



01/12/84  
BASE TIME - 27698591.000 SEC.

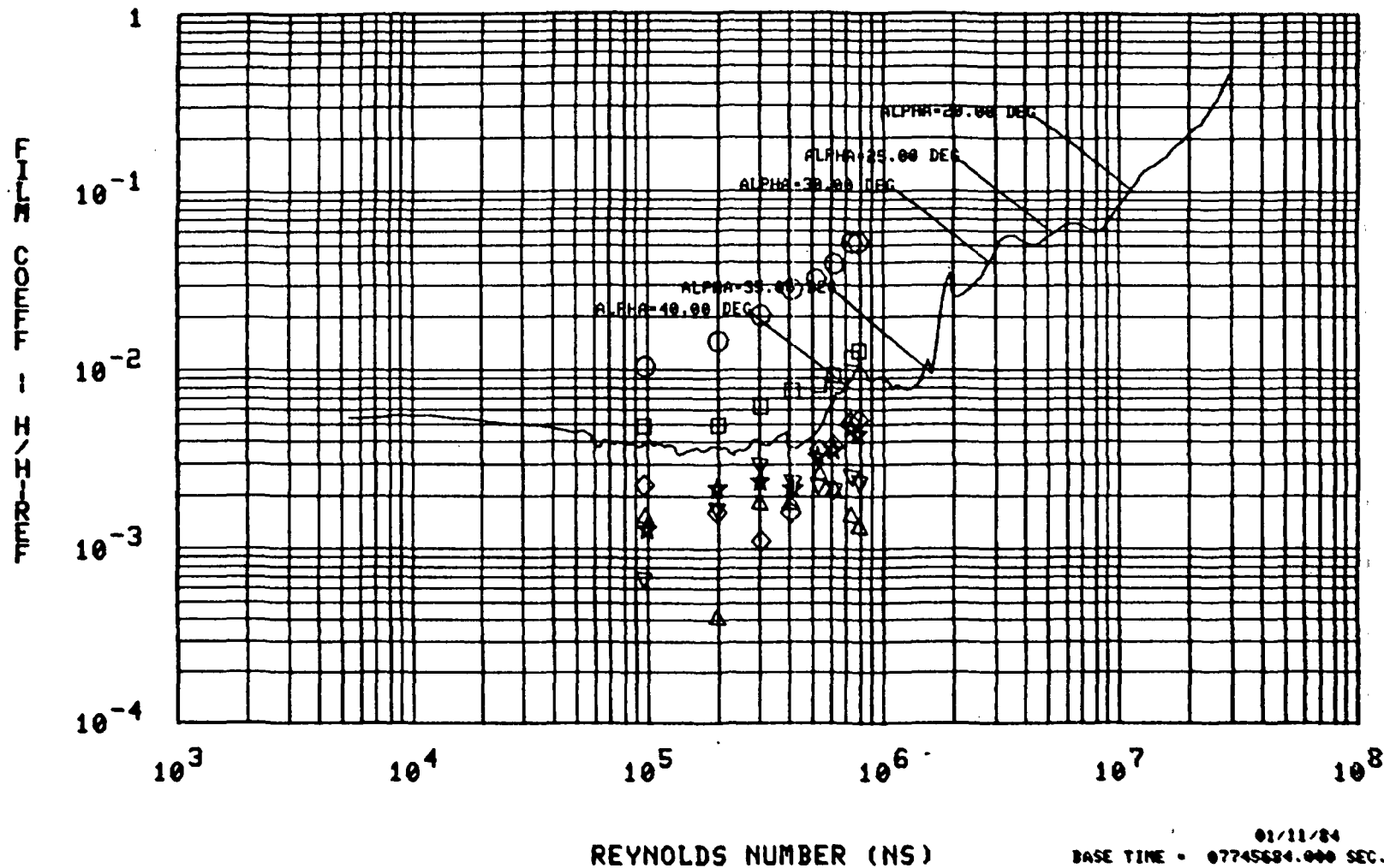
B-501

# STS-3 (107 FT LENGTH SIDE PLB DOOR $X/L=0.80$ ) $Z=440$

○  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9926A/H-REF 200-1440 SEC



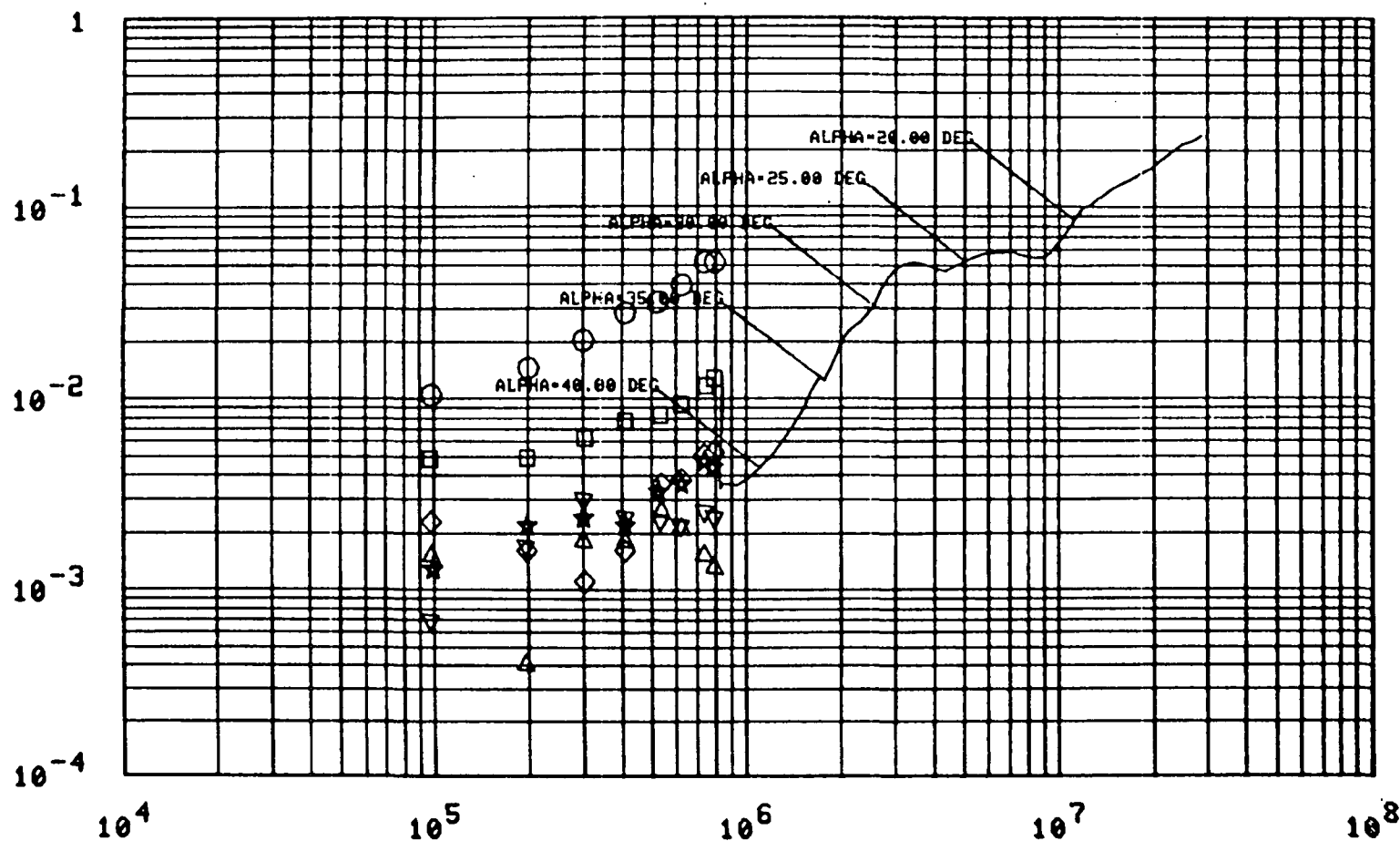
# STS-4 (107 FT LENGTH SIDE PLB DOOR $X/L=0.80$ ) $Z=440$

○  
◇  
□  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9926A/H-REF 965-1360 SEC

LINE CODE - H-I-0111



REYNOLDS NUMBER (NS)

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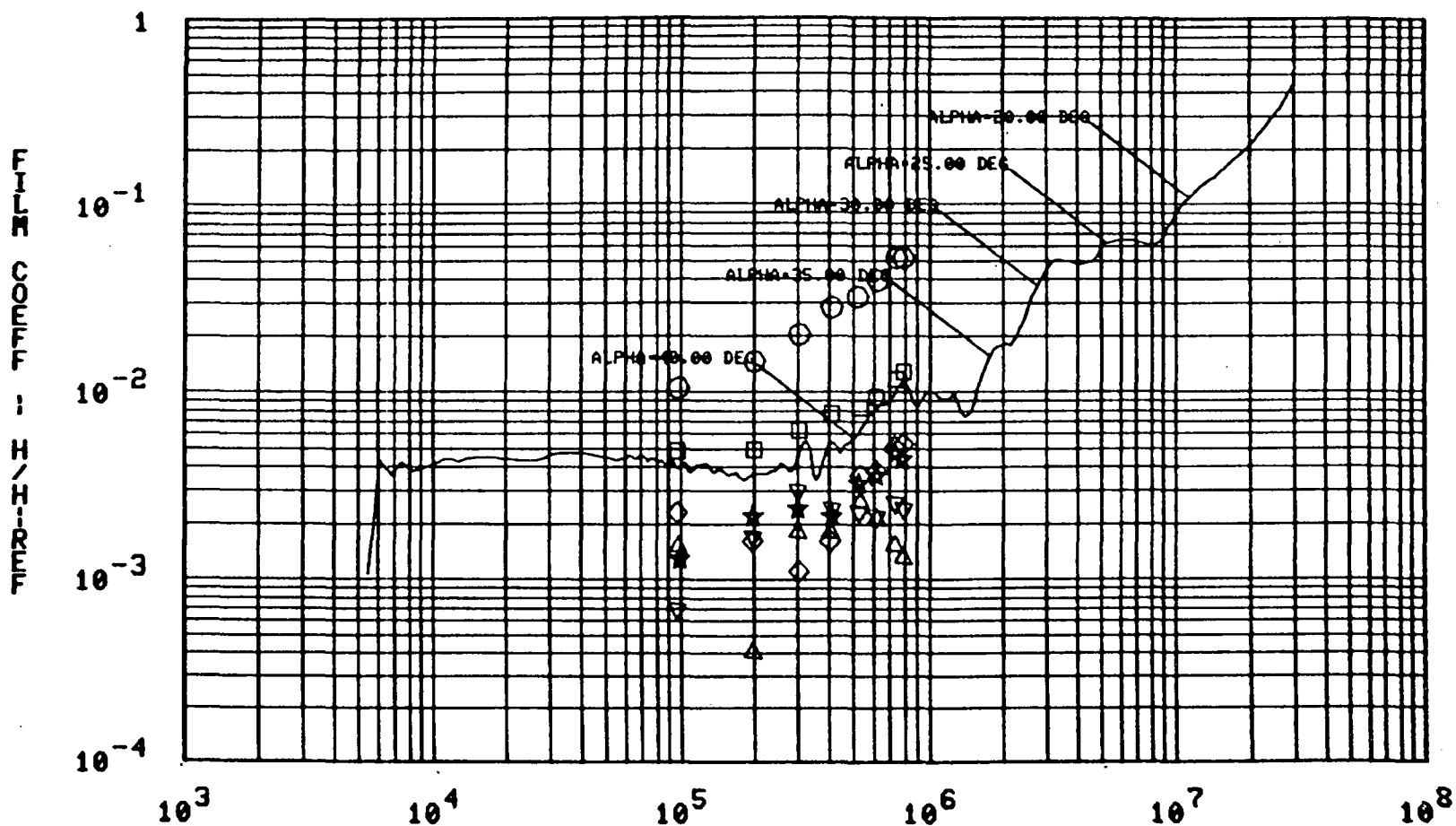


# STS-5 (107 FT LENGTH SIDE PLB DOOR $X/L=0.80$ ) $Z=440$

○  
□  
◇  
△  
▽  
★

OH74 ALPHA = 20 DEGREES  
OH74 ALPHA = 25 DEGREES  
OH74 ALPHA = 30 DEGREES  
OH74 ALPHA = 35 DEGREES  
OH74 ALPHA = 40 DEGREES  
OH74 ALPHA = 44 DEGREES

U07T9926A/H-REF 150-1430 SEC

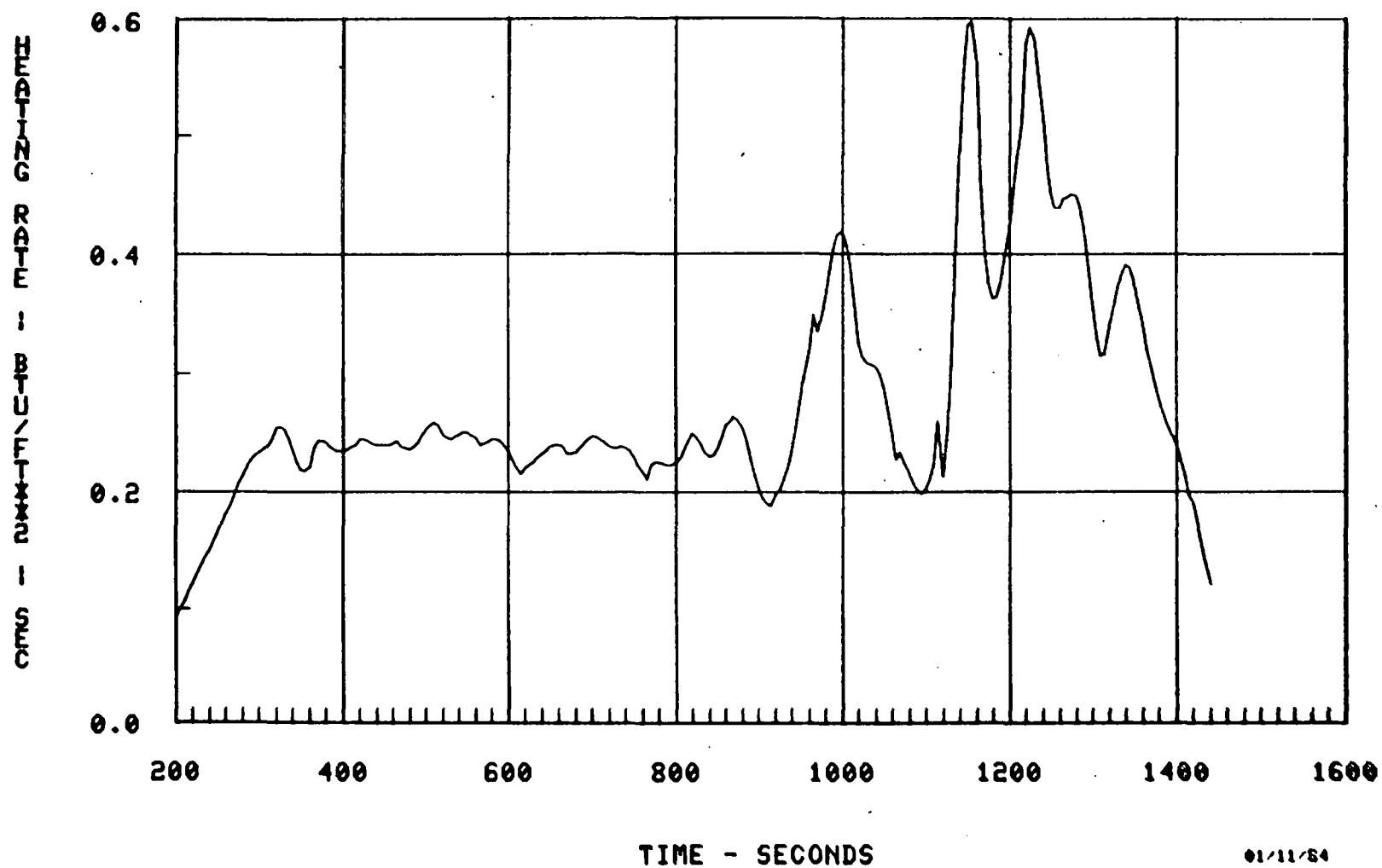


REYNOLDS NUMBER (NS)

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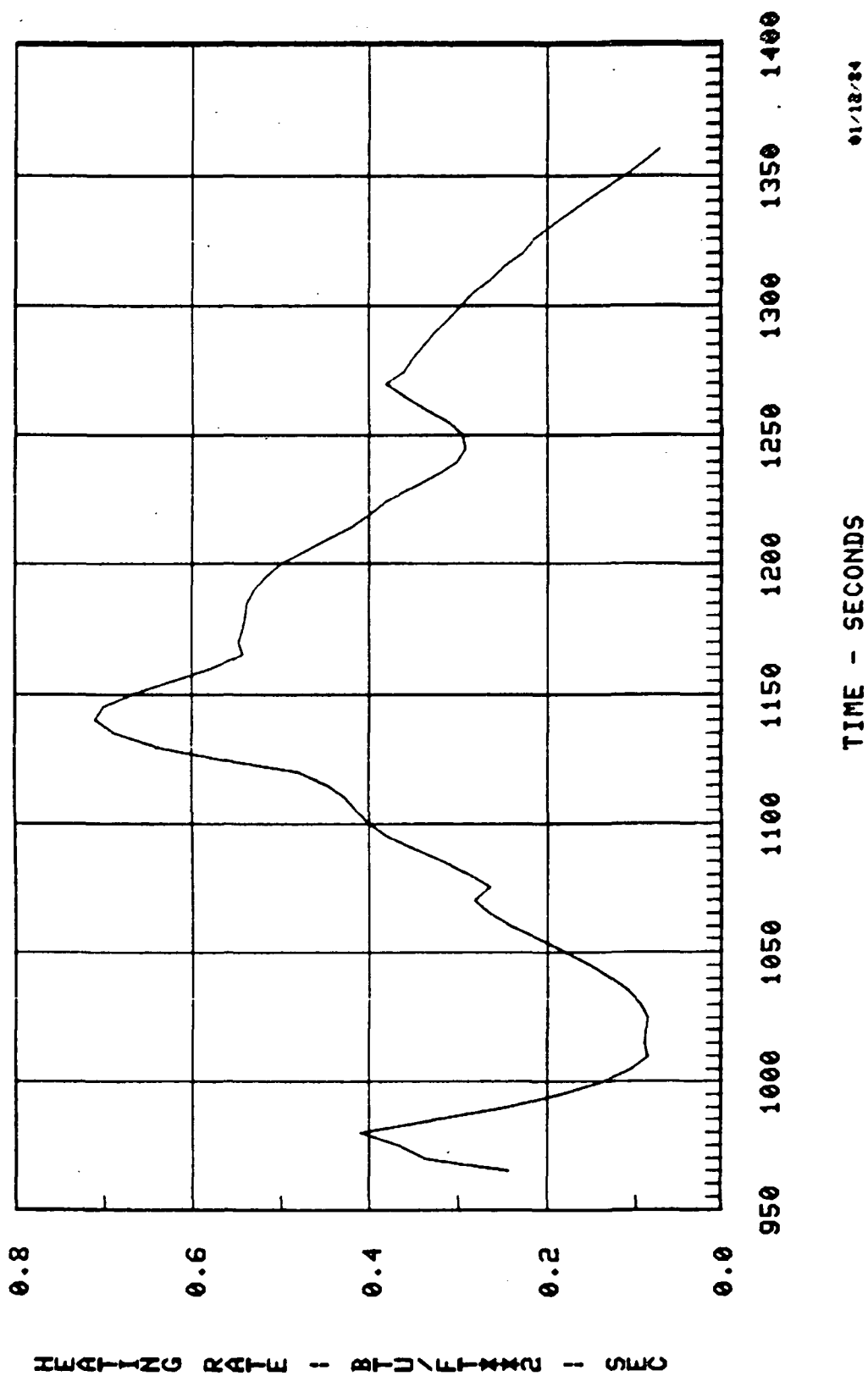
STS-3 (107 FT LENGTH SIDE PLB DOOR  $X/L=0.80$ )  $Z=440$

U07T9926A



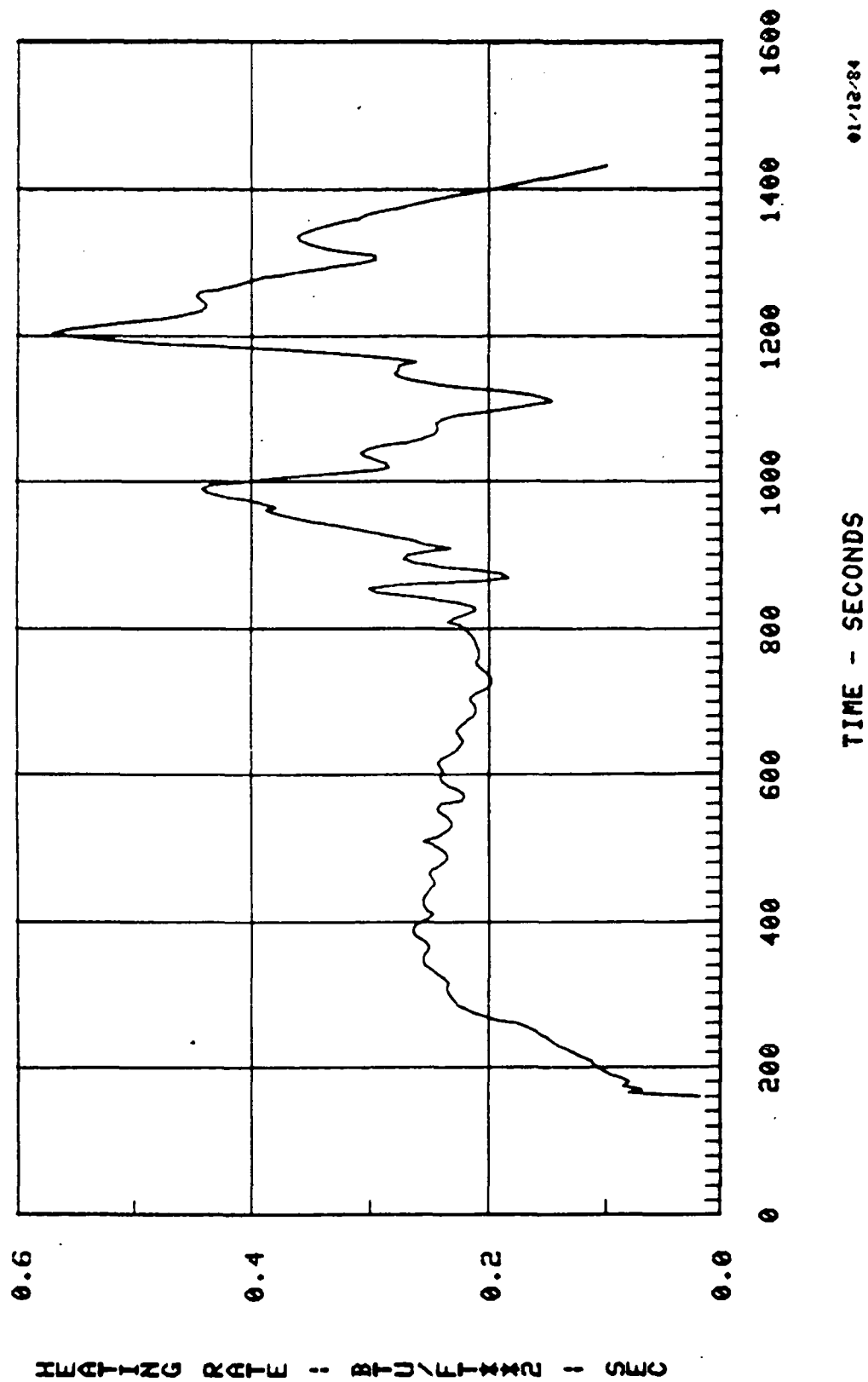
STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.80) Z=440

U07T9926A



STS-5 (107 FT LENGTH SIDE PLB D00R X/L=0.80) Z=440

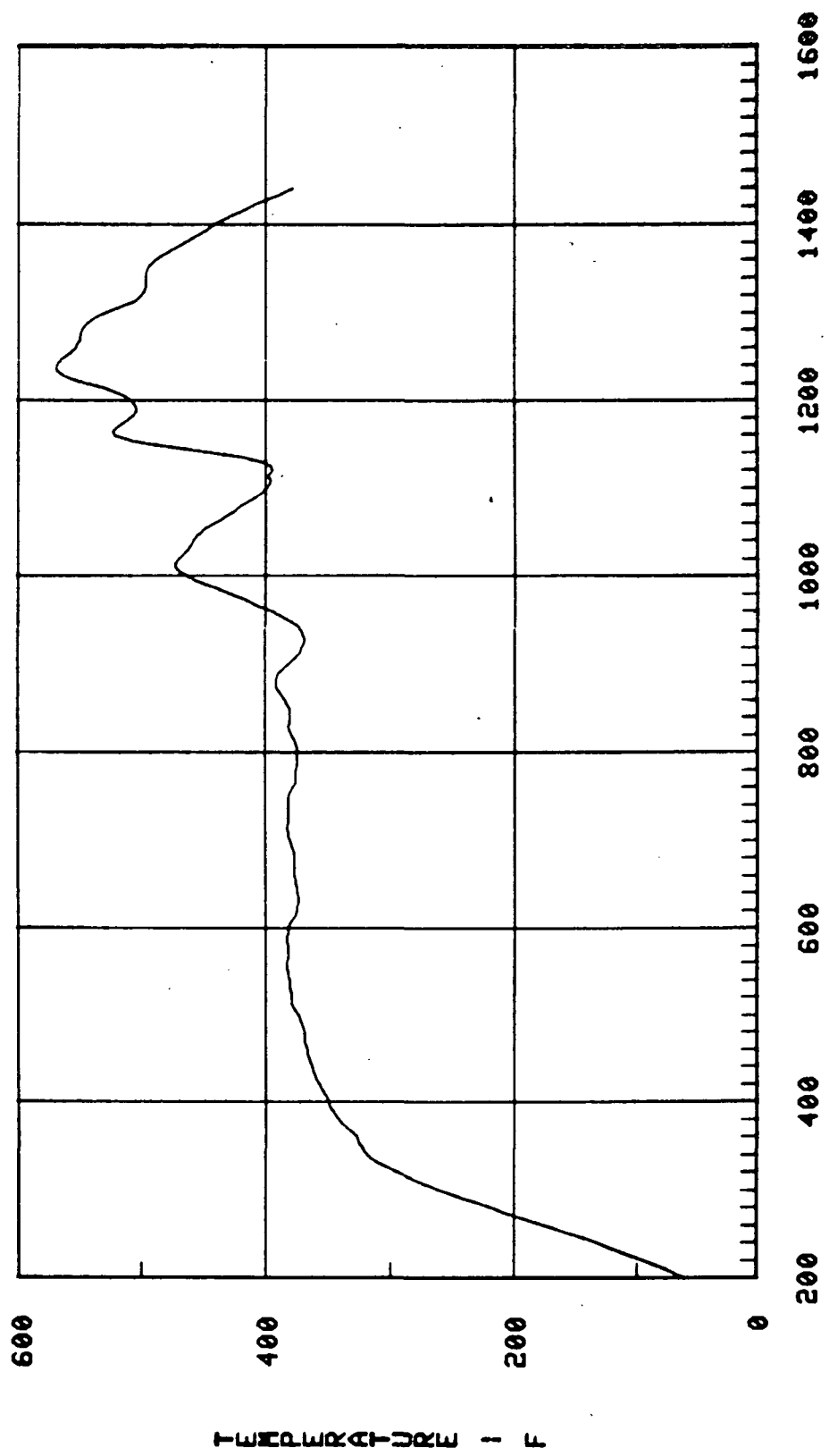
U07T9926A



01/12/84

STS-3 (107 FT LENGTH SIDE PLB DOOR X/L=0.80) Z=440

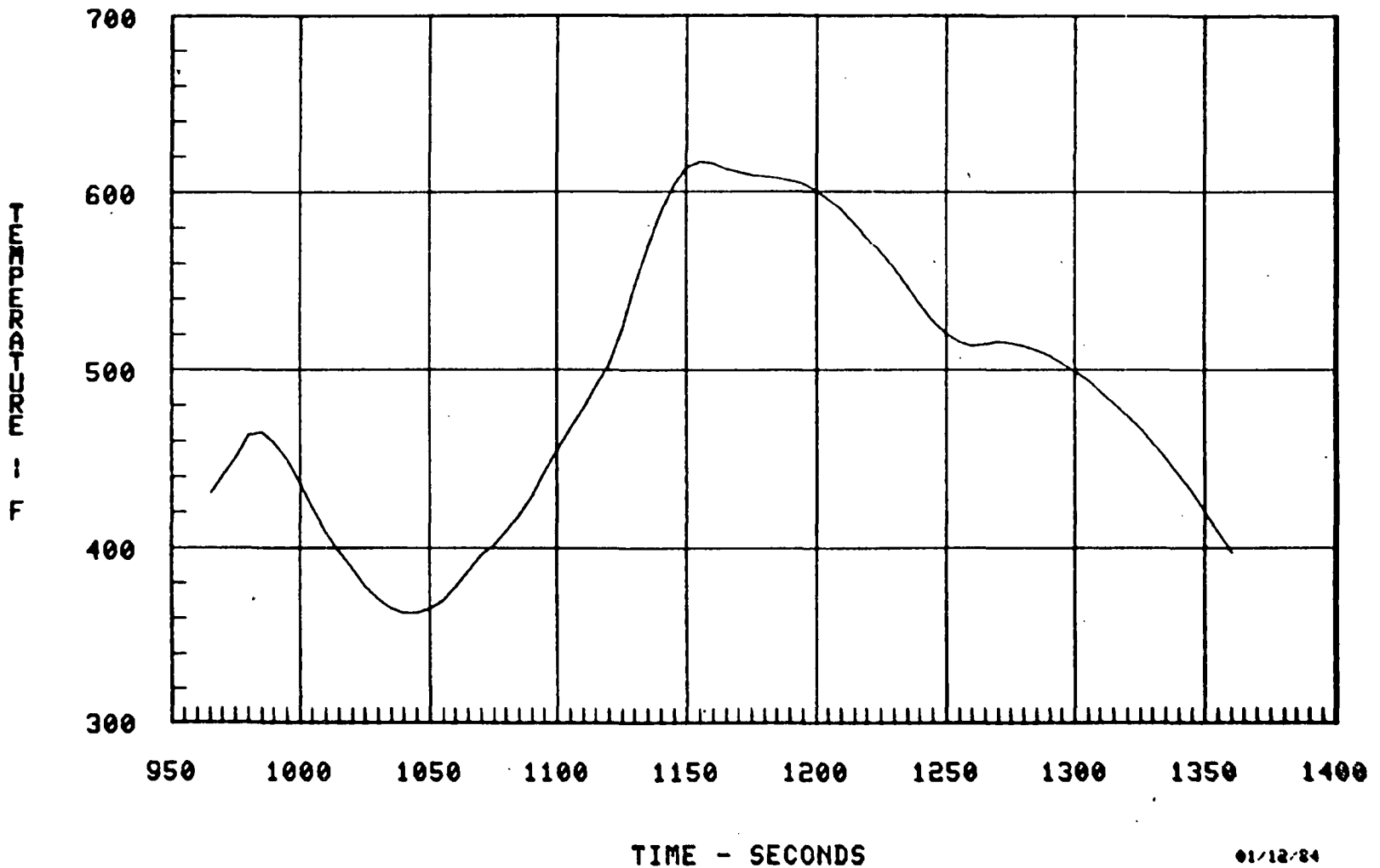
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TIME - SECONDS 01/11/84

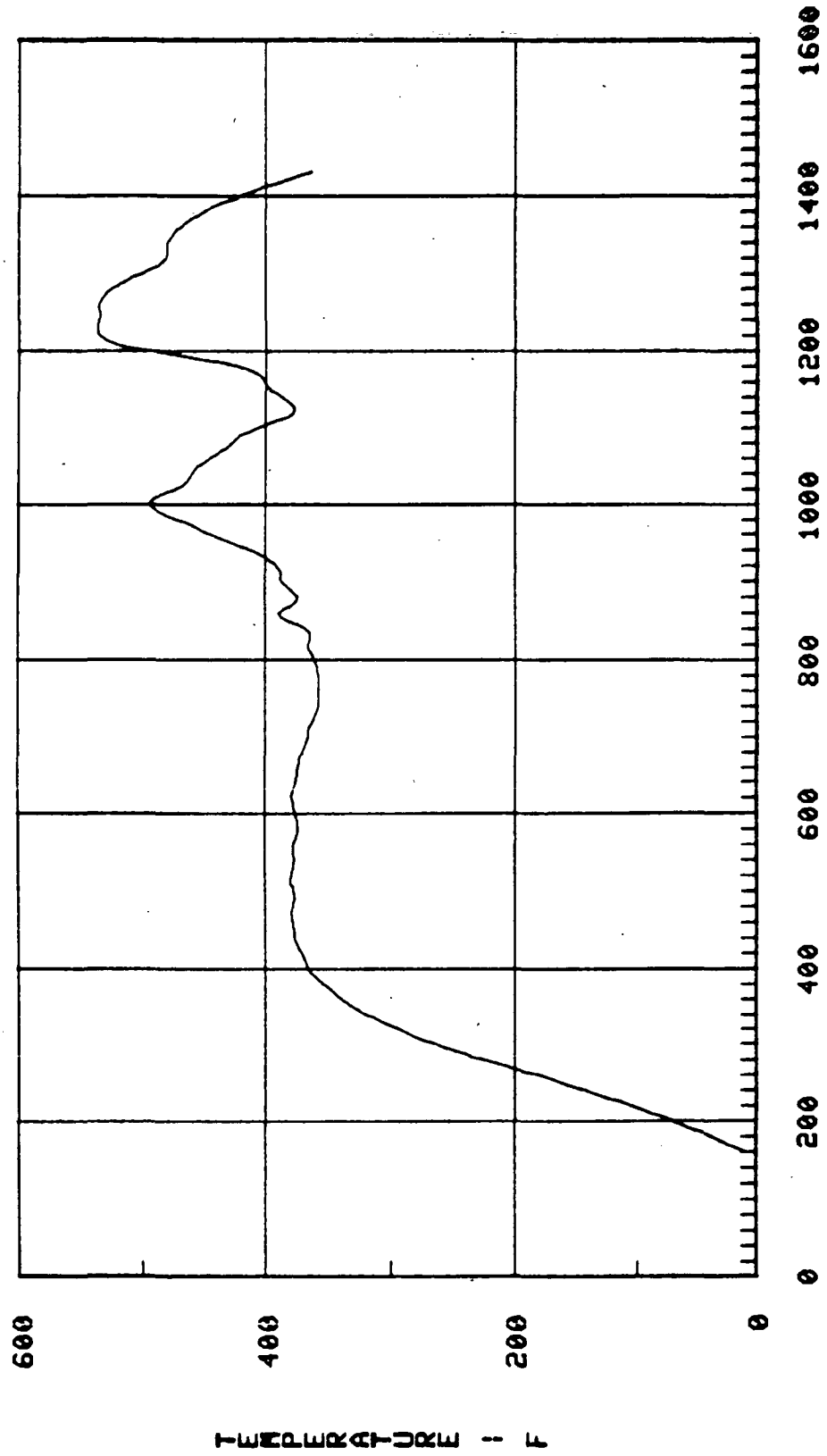
STS-4 (107 FT LENGTH SIDE PLB DOOR X/L=0.80) Z=440

U07T9926A



STS-5 (107 FT LENGTH SIDE PLB DOOR X/L=0.80) Z=440

U07T9926A



01/12/84

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16. Abstract  Entry heating flight data and wind tunnel data on the side fuselage and payload bay door, $Z = 400$ and $440$ trace aft of $X/L=0.2$ , are presented for the first five flights of the Space Shuttle Orbiter. The heating rate data is presented in terms of normalized film heat transfer coefficients as a function of angle-of-attack, Mach number, and Normal Shock Reynolds number. The surface heating rates and temperatures were obtained via the JSC NONLIN/INVERSE computer program. Time history plots of the surface heating rates and temperatures are also presented.					
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